Query, J. H.
Thesis 1933

Use of "Seashore musical talent tests" and its relation to the selection of pupils for the study of instrumental music.

Ethel of Education
Aug. 5, 1933
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Ed.
Thesis
Query, J.H.
1933

BOSTON UNIVERSITY

SCHOOL OF EDUCATION

THESIS

The use of the "Seashore Music Talent Tests and its Relation to the selection of pupils for the study of Instrumental Music."

Submitted by

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(B. S. in Ed. Boston University 1930)

In partial fulfillment of requirements for the degree of

Master of Education

1933

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Boston University
School of Education
Library

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The Use of the Seashore Music Talent Tests " in the Public Schools and its relation to the selection of pupils for the Study of Instrumental Music.

-I-

THE NEED FOR MUSIC TALENT TESTS

The amazing growth of music in the public schools and the realization that it can no longer be regarded as only an extra curricular activity are outstanding factors in the recent history of education. The importance of music as an educator of the emotional life of the child and as a natural means of self-expression has given it a prominent place in the thinking of progressive educators. It is only during the last few years that instrumental music has grown to large proportions in our public school systems. Before this time it was not unusual for one teacher to assume the duties of instruction in art, vocal music, and orchestra and band direction, -- if the schools were fortunate enough to have these instrumental groups. Along with these duties, the teacher sometimes had several classes in other subjects which required an entirely different training and preparation.

As music was considered to be of secondary importance, such teachers were selected on the basis of their academic training. A superintendent often decided to engage one teacher rather than another, because the first had received some musical training and could assume the duties of teaching music along with her "more important" classroom work. It is obsious, that only too often the teacher's musical preparation and knowledge was superficial and entirely inadequate for the task given her.

It is not my purpose in this study, to discuss in detail the growth of public school music in this country. There are no available data which show the number of schools in the country that had organized music curricula twenty-five years ago. It has already been pointed out that even those schools which did attempt a music program had, in the main, music teachers who were insufficiently, and in many cases, wholly unprepared to teach music. Even when educators began to realize the value of music, it was generally recognized as an activity apart from the regular educational program.

The preceding paragraph simply gives a background of the situation that existed not so many years ago; - - and when it is compared to the present status of school music, we find an amazing difference. From the first

grade through the high school, vocal music has been organized on a logical and progressive basis. In both its curricular and extra-curricular aspects, vocal music finds a prominent place. Glee clubs, choruses, operettas and festivals, -- the outgrowth of the organized vocal program in the grades, -- have reached high levels of interest as well as quality of performance.

Along with the rise of vocal music came the interest in instrumental music. Bands and orchestras began to appear in great numbers, striking a popular chord of response in public sentiment, and even reaching the proportions of intense rivalry between neighboring towns. A community with a high school band or orchestra was the envy of adjacent towns, thus an increasing number of towns were stimulated to organize their own musical activities. Large sums of money were appropriated for instruments and other musical equipment, and specialists in teaching of instrumental music were engaged.

The recognition of the study of instrumental music, in spite of the commercial abuses and exploitations that have crept in, means that the artistic and emotional life of the child is receiving attention in a practical way. Yet the danger in this situation is that over-emphasis, or emphasis in the wrong direction by

"ultra-enthusiasts" can do considerable harm. It is doubtful that the slogan "Music for every Child, every child for Music" can be accepted without reservations. It is probably quite true that most of us react to music in one form or another and that this response may be strong in some and comparatively weak in others, and it is also probable that some of us who are less talented seem to be limited to the enjoyment of listening to good music and perhaps singing or playing within the scope of our limited ability. Then there are others who appear to be endowed with an exceptional musical gift. Between these two extremes, those endowed with little or no talent, and those whose ability is close to genius, we find the average, who, in their own group, may vary to the extent that some can develop into capable performers, while others will never progress beyond the point of mediocrity. If we can analyze these capacities with a reliable degree of accuracy we shall be able to make a valuable contribution to the field of educational and vocational guidance.

Professor Seashore (1) says, "When we consider on the one side the enormous sums of money spent for

(1) Carl E. Seashore "The present Status of Research in the Psychology of Music at the University of Iowa" University of Iowa Vol. II No. 4, June 15, 1928.

private instruction in music, the astonishing large mortality of aspirants in training for a musical career or even an ordinary proficiency, the crushing of hearts through the pursuit of unwarranted ambitions, and on the other the loss to music and to society of undiscovered and unmotivated talent, the necessity for educational guidance in music looms up large. " The possibilities for such guidance will be discussed in the following paragraph, with special emphasis on our present discussion of instrumental music.

Instrumental music has been riding the crest of a wave of popularity and it is surely deserving of full favor if directors of music are careful to maintain it on the highest level. At the time this thesis is being written, the schools are under close scrutiny. In many cities and towns, certain subjects are being eliminated from school program in order that the tax-payers may be less burdened. The music program is "under fire" along with other courses which many people still believe to be non-essential in public education. Therefore, it is important that those who are chosen for instrumental instruction are from the group who, by scientific testing, are found to have enough musical talent to prognosticate sucess.

The value of music talent tests that had been proved reliable, is that they would not only uncover unknown talent but they would save the time and expenses heretofore taken by the "tryout period" of three or four months or more; the period of time it formerly took to finally decide whether or not a child had the ability to learn to play, thereby eliminating those with little or no musical gifts and sparing them the humiliation of almost certain failure later on. It is apparent that the general level of instrumental music could be raised under this procedure. With this testing program in operation talent would be discovered in the student body, that otherwise might have remained dormant. We are judged by the quality of our work, and if scientific testing of musical talent can result in the choice of a group of children who show positive indications of ability, it follows that we can develop better players, thereby justifying our own worth and the value of our program to the school system.

II PREVIOUS STUDIES

The earliest attempts to measure musical talent were made in 1901 by Carl E. Seashore of the State University of Iowa. After considerable research a series of music tests were standardized and produced on phonograph records. Dr. Seashore (1) gives us the background of his experiments and consequent development of the tests that bear his name in the following statement: "The program for the development of the measures is built upon a theoretical analysis of the structure of the musical mind, showing in detail a classification of sensory, motor, cognitive, affective and conative processes with the aim of facilitating acquaintance with the integrated personality in the total situation within which it functions. We make no attempt to make a complete survey, but rather aim to have at hand a variety of measures which may be drawn upon in meeting a specific situation. Six of the most fundamental measures have been placed upon phonograph records and may be used in either individual or group tests." These tests are intended for measuring the sense of pitch, sense of intensity, sense of time, sense of rhythm, sense of consonance and sense of tonal memory. They can be given to any group from the fifth grade up to and including the adult group. Each record is adjusted so as to be easy

(1) Carl E. Seashore "The Psychology of Music Talent" New York: Silver, Burdett and Co., 1919.

enough in parts for the poorest listener and difficult enough in parts for the best listener. Each test consists in the playing of both sides of a disc, each side taking about four or five minutes. The pupils are furnished with test blanks (Note Figure I P12) and are given the following directions before the test begins:

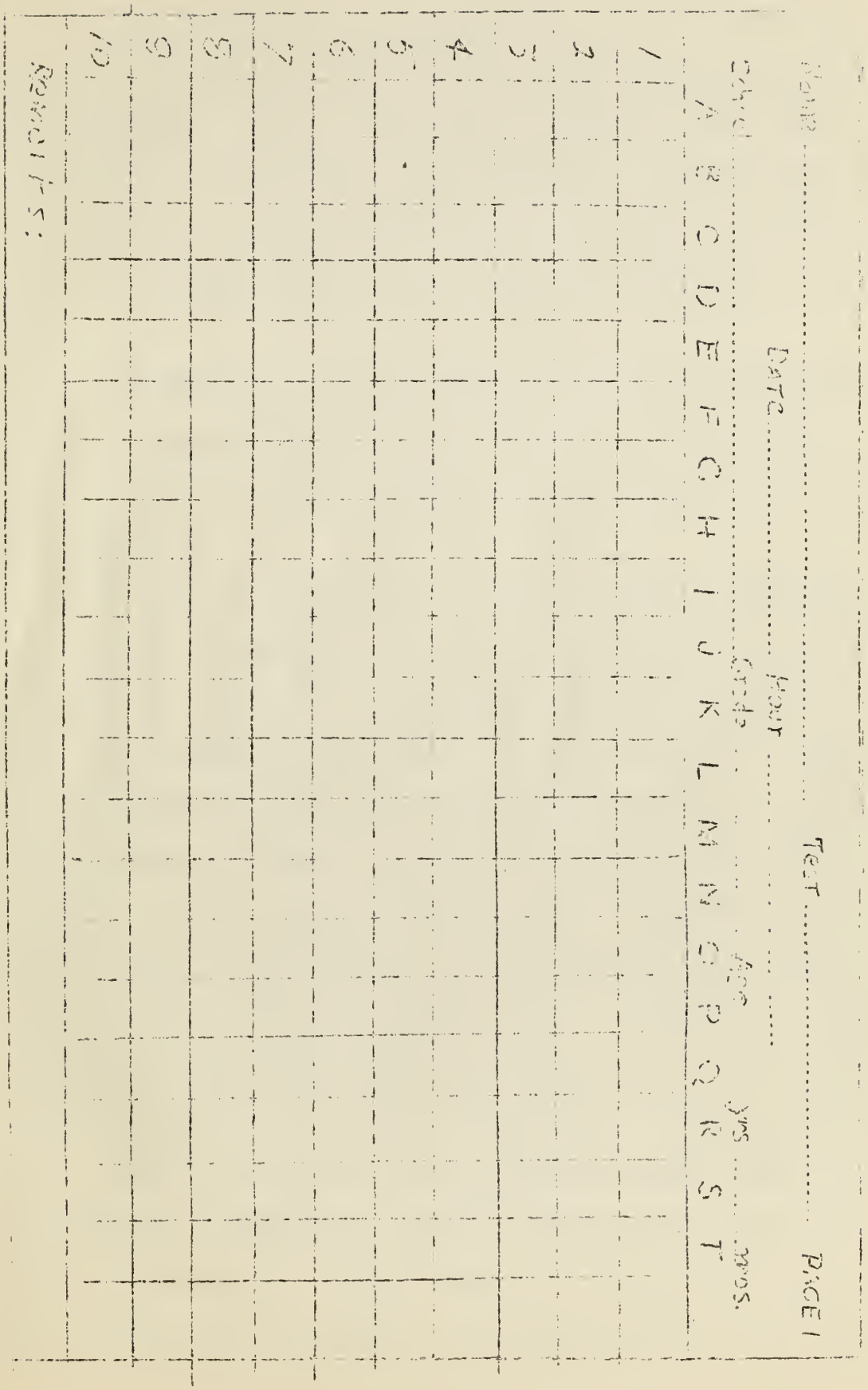
I. PITCH TEST: You will hear two tones which differ in pitch. You are to judge whether the second is higher or lower than the first. If the second is higher, write H; If lower write L.

II. INTENSITY TEST: You will hear two tones which differ in loudness, or strength. You are to judge whether the second is weaker or stronger than the first. If the second is stronger than the first, write S; if the second is weaker write W.

III. TIME TEST: You will hear three clicks marking off two intervals of time. If the second interval (that is, the time between the second and third clicks) is longer than the first interval, write L; if it is shorter, write S.

IV. CONSONANCE TEST: You will hear two combinations of two tones each; one combination is better or worse than the other in consonance (harmony). A good combination is one in which the two tones are smooth, and blend. A bad combination is just the opposite. If the second combination is better, write B; if worse, write W.

Figure 1


Name
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Remarks:

V. TONAL MEMORY TEST: In each trial you will hear a series of tones played twice. In the second playing, one note is changed. You are to write, by number, which one was changed. In listening, count mentally; for example, 1, 2, in the first playing, and then likewise in the second playing, so you may identify the one that is changed without error.

VI. RHYTHM TEST: You will hear in rapid succession two rhythmic patterns; the second is either the same as the first or different. Listen and write S, for the same, or D for different.

In giving these directions I find it quite necessary to use simpler language and to have the children practice, asking them to speak out the answers, sometimes together and at other times individually. It is necessary to make sure that those who are taking the test (especially in the case of younger children) thoroughly understand what they are doing. In the Pitch, Intensity, and Time Tests, there are one hundred trials and in the Consonance, Tonal memory, and Rhythm Tests, there are fifty trials. The percent right is compared to the norms established for each test so that the individual's rating can be determined. It can be seen from the copy of the norms on the following page,(Fig. 2.) as worked out by the author of the Talent Tests that it is a comparatively easy matter to find the correct percentile score of each child or adult. In correcting the test the

- Figure 2-

Correction Key for the Pitch Test showing how percentile scores may be determined from the percentage of correct answers.

Pitch Key

	A	B	C	D	E	F	G	H	I	J
	30	23	17	12	8	½	1	2	3	5
1.	H	H	L	H	L	L	L	H	L	H
2.	H	L	H	H	H	H	L	L	H	H
3.	L	L	L	L	H	L	H	L	L	L
4.	H	L	L	L	L	L	L	H	H	H
5.	H	L	L	H	H	H	H	L	H	L
6.	L	H	H	L	H	H	L	H	H	L
7.	H	L	H	L	L	L	L	L	L	H
8.	H	L	L	H	H	L	L	L	H	L
9.	L	L	L	L	L	H	H	L	L	L
10.	L	H	L	H	H	H	L	H	L	H

The Norms

---------- Percent Right----------

Centile	Grade 5	Grade 6	Grade 7	Grade 8	Adult
99	89	90	91	91	93
95	85	87	88	89	90
90	82	84	86	87	88
85	80	82	84	85	87
80	79	81	83	84	86
75	77	79	81	83	86
70	75	78	80	82	85
65	74	77	79	81	84
60	72	75	78	80	83
55	70	73	76	79	82
50	67	71	75	78	81
45	65	69	73	76	80
40	63	67	71	74	79
35	61	65	69	73	78
30	59	63	67	70	77
25	57	61	64	67	75
20	55	58	61	64	72
15	53	56	58	60	70
10	51	53	55	57	66
5			51	52	61

percentage of right answers is referred to the norm scale. For example let us suppose that an adult has eighty percent of the answers correct. Referring to the norm scale we find that he has a percentile ranking of 50 which represents average musical ability --- that is neither superior nor inferior. Consulting the scale again we find that to be rated at the same score of average 50 the child in grade eight would have to get seventy six percent of the answers correct, the child in grade seven, seventy-three percent, the child in the sixth grade, seventy one percent, and the child in grade five, sixty-seven percent. Juniors and Seniors in high school are treated as adults in scoring their results. Norms for the other five tests are given in like manner. Seashore admits there is no guarantee that those who score high will, in all cases, develop into good musicians, because other considerations, such as imagination, motility, and muscular control must be part of the successful musician's equipment. He claims, however, that these fundamental senses must be present and that they can be measured successfully even in very young children. The special value of the Seashore Tests is that <u>each of the fundamental senses</u> can be measured separately. We can determine whether or not the child has good sense of pitch, a feeling for rhythm, an ability to distinguish what combinations of tones sounded together are well blended. In this way the individual's various abilities or potentialities in music can be measured. For those who are already studying music

the tests often reveal what special talent they possess; that is, some may have an unusually fine sense of pitch and in many cases should be urged to study for solo playing if musical temperament and imagination are strongly indicated. Others may have an excellent feeling for rhythm and perhaps a fair sense of pitch. These people might well work toward group playing as in orchestra or band. Some may have a poor sense of pitch but an excellent sense of time, rhythm and intensity (the ability to distinguish fine shadings of loud and soft). In short, the Seashore Tests leave nothing to chance but examine each of the senses separately. In such guidance we must, of course, consider the individual's temperament and other characteristics not measured by the Seashore tests. The preceding interpretation and suggested guidance is given merely to show that the student's strong and weak capacities give us some basis for directing him in the best "channels" for his musical outlet and development. These examinations somewhat parallel that given by the physician. In the physical examination he does not simply draw his conclusions from the visible appearance of the patient under observation; he examines the heart, the lungs, the blood and various other organs and muscles before he can give a complete diagnosis of the strength and weakness of that human body. Then he prescribes what can be done, if anything, to strengthen and develop these various organs and muscles. The Seashore Tests may be used in much the same way - the findings of musical strength and weakness can be utilized in the development of the young musician.

Seashore has given his tests to many groups of adults and children and while he has found that children tend to inherit musical talent, in general there is no great difference in talent between children and adults --- in other words - -- a difference in age does not necessarily mean a superiority or inferiority in musical talent, because as Seashore has found from extensive testing: "Musical discrimination does not improve with age - it may even decline." This is another indication that what talent we possess is present at birth and while it may be aided by instruction and practice, good musicians never can be developed from the untalented.

In answer to the question often asked "How can listening to these tests of musical talent determine whether or not a person has the potentialities for becoming a good performer?" The answer is that the results of the tests cannot and do not guarantee that those who score well can become good musicians. However, the tests have been used as a means of eliminating those who have little or no talent because obviously it is impossible for anyone to play in accurate tune or time or with the correct dynamic force if he is unable to hear accurately what he is playing. His "ear" is the judge of his own performance and if the ear is faulty the performance will be faulty. While it is true that a high score in the Seashore Tests does not guarantee potential success as a performer because there are other factors to be considered

such as physical strength and control of the muscles involved in playing and also imagination and emotional expression, it is the closest approach to prognosticating success in music that has been developed to date. Seashore admits that no system of tests is "foolproof" and that there are some cases of individuals succeeding in music even after tests had previously pointed toward almost certain failure. However, these cases are only the scattering few that science was unable to account for. He gives us no actual data but from his experience he has found that the number of cases of those who have succeeded are so few as to be practically negligible.

Following the appearance of the Seashore Tests, many other studies were made, which depended wholly or in part on the Seashore phonograph records as laboratory equipment. The results of the following studies are especially valuable because they give a history of the findings of Seashore Tests as applied in different situations and to different type groups. Many of these studies have been made for the purpose of determining the reliability of the tests and the extent to which each of the six records can be used.

N. J. Klaur (1) made a thorough investigation to determine whether training in rhythm tended to improve the discrimination of rhythm. Two different groups were selected

(1) N. J. Klaur, "The Effect of Training in Rhythm Upon the Rhythmic Discrimination in the Intermediate Grades." University of Iowa Thesis, 1924 (Reviewed by R. C. Larson "U. of Iowa Vol. II No. 6, March 1, 1930.)

in the intermediate grades; one group was given intensive drill in rhythm for a period of two months and the second group was given no drill at all. Before the drills were begun both groups were given the Seashore rhythm test. At the end of the two months drill period both groups were retested. Klaur's table of results is not available but she found that the group which had been thoroughly drilled showed no improvement in score after the second testing and the group which had received no drill scored as well in the first testing. This would seem to bear out Seashore's opinion that training does not improve the capacity for rhythm because it is an inborn talent.

Professor Jacob Kwalwasser (1) says that the consonance test can be of little value on account of the conflicting opinion as to what combinations of tones sound well together. No two musicians will always agree on what chords are actually harmonious or discordant. In modern harmony many chords are acceptable which heretofore were outlawed. It does not seem, however, that this criticism by Kwalwasser could have the same application when the consonance test is given to children who have had no schooling or experience in modern harmony.

(1) Jacob Kwalwasser, "Tests and Measurements in Music" Journal of Experimental Psychology, 10, 1927 P.P. 69-113.

E. H. Gaw (1) says that the time test is very difficult for fifth grade children. He omitted the more difficult section of the test and found a more normal distribution and concluded that the test given in that form was more suitable for the fifth grade. In order to make up the full number of trials he gave the test twice. This procedure seems rather questionable because if the difficult section of the test were omitted, there would be no guarantee that the children scoring high have a keen sense of time. At best it could show only their individual abilities within their own group.

E. M. Tierney (2) gave the Seashore tests to a group of ninety-five college freshman. He also gave this same group an achievement test, which he devised, and the Otis self-administering Intelligence Test. He found little relationship between achievement in music and intellectual ability. His findings indicated that the Seashore tests are uncertain in prognosticating achievement --- that they are not entirely reliable. Tierney gives no data, however, on the reliability of his self-devised achievement test.

(1) E. H. Gaw, "A Survey of Musical Talent in a Music School" Psychol. Review, Mon. Supp. Iowa studies 31, 1923, P.P. 128-156.

(2) E. M. Tierney, "A study of freshman student achievement in the school of fine arts in the Univ. of Nebraska."Univ. of Neb. Vol.I, No. 2 1928, P. P. 54-63.

(1) C. C. Fracker and V. M. Howard gave Otis self-administering test, the Army Alpha Test, and the Seashore Tests to a group of 230 university students. It was found that the Seashore Tests did not in any significant way, measure intelligence. The intelligence scores ranged from 70-134 I. Q., the median being 107.3. The highest correlation was .32± .04 between pitch and I. Q. This bears out Seashore's statement that his tests are in no way a measure of intelligence.

(2) L. S. Hollingsworth gave the Seashore Tests to forty-nine children who tested above 135 I. Q. The I. Q's ranged from 135-190 with a median of 153. It was found that "intellectually superior children are not superior to average children of their age in musical sensitivity."The findings in the Hollingsworth study can be compared to the findings in the present study which does not attempt to measure the results of talent scores between children of average and superior intelligence but does compare the talent scores of

(1) C. C. Fracker and V. M. Howard, "Correlation Between Intelligence and Musical Talent Among University Students" Psychol. Mon. Supp. (Iowa Studies) 39, No. 2, 1928, P. P. 157-161.

(2) L. S. Hollingsworth, "Musical Sensitivity of Children Who Test above 135 I. Q." Journal of Ed. Psychol., 17, 1926, P. P. 95-109.

average and superior children to the scores of children of inferior mental ratings. This discussion will be found in connection with Chart I of this thesis.

(1) L. H. Lanier used the Seashore Tests as "special ability tests." He found the reliability was not very high. He concluded that "the reliability of a particular test is largely dependent on the attitude of the person tested." He also found, by varying the length of the tests that a test one half as long as the present one would give the same results. He also discovered that the monotony of the records brought about "frantic feelings" and "tiresomeness". This seems to be the criticism made by many who have given the tests. I have found that certain measures can be taken to eliminate much of this objection which will be explained in the section of this thesis entitled "The Seashore Tests as given in the East Hampton, N. Y., Public Schools."

(2) A. R. Gilliland and C. R. Jensen reported that the only value in the Seashore Tests is that subjects can be selected who can discriminate between relatively large pitch differences. The small differences in pitch are so affected by

(1) L. H. Lanier, "Prediction of the Reliability of Mental Tests and Tests of Special Abilities." Journal of Exp. Psychol., 10, 1927, P. P. 69-113.

(2) A. R. Gilliland and C. R. Jensen, "Reliability of Seashore Phonograph Record for Measurement of Pitch Discrimination. Journal of Exp., Psychol., 5, 1922, P. P. 214-222.

the scratch of the needle on the phonograph record, and the metallic overtones, that accurate judgement by the students is seriously affected. (This objection is greatly eliminated with the invention of improved phonographs).

M. Schoen (1) gave the Seashore Tests to ten children. He also gave them tests of musical feeling and understanding. He concluded from the study, "that the amount of talent a student possessed as a whole was indicated." Those who had feeling and understanding scored well on the Seashore Tests.

Carl E. Seashore (2) in reporting how the tests have been used in discovering musical talent, finds "that they have been found useful in the selection of material for musical organizations in the public schools, economy being a significant factor." The economy factor warrants special consideration in a time of economic depression because the talent test is of inestimable value if it can eliminate the time and expense usually required to discover whether a child is capable of learning to play.

(1) M. Schoen, "The Validity of Tests of Musical Talent." Journal of Comp. Psychol., 3, 1923, P. P. 101-122.

(2) Carl E. Seashore, "The Present Status of Research in the Psychology of Music at the Univ. of Iowa." Series of Aims and Progress of Research, Vol. II, No. 4, 1928.

Seashore in a survey has found numerous cases where the tests have resulted in a great saving of time which, of course, means a corresponding saving of money to the school taxpayers. Seashore states that in the past there has been little correlation between possession of talent and selection of children for study. He found no evidence to show that musicians as a class have a marked superiority or ability in hearing low tones on account of their training in music. In this phase of the study he used several musicians who are recognized masters of their art. Pitch discrimination is given special emphasis by Seashore as he says that upon this fundamental capacity rest most of the powers of appreciation and expression in music. He also found that pitch discrimination does not improve with age---- it may even decline. The reason for this possible decline in ear sensitivity lies in the fact that most organs and muscles start to deteriorate with age. Sense of pitch does not improve appreciably with practice according to Seashore's findings and a keen "ear" is found as often among those who have had no training as among those who have had considerable musical experience. He reports from his tests and experiments that "If professional musicians score high in the talent tests, it is because they are musical and not because they are trained." He found no evidence that training brings about improvement in talent scores. In experiments with the students of the Iowa School

of Music, no appreciable gain in scores was shown over several years of musical training. In summing up his explanation of the tests, Seashore admits that while they measure necessary fundamental equipment, muscular control, imagination, emotional feeling and other factors must also be present if success in music is to be realized.

Hazel M. Stanton (1) of the Eastman School of Music, Rochester, New York, uses the Seashore Tests for the purpose of classifying students who are entering the school. Every applicant for admission is required to take the tests. Miss Stanton has six classifications: A, B, C+, C-, D, E. The A music talent is called Safe and Probable; the B. talent is called Probable and Possible; the C+ talent is called Possible and Doubtful, and the C- talent is Doubtful and Discouraged. Those who class as D and E talent are not allowed to enter the school. Mis Stanton finds justification for her scheme and she makes the following observations: "The percentage of survivors in the music course increases from the lowest group to the highest group; the percentage of dismissals due to low records decreases from the lowest to the highest with fifty percent of dismissals occuring in the lowest

(1) Hazel M. Stanton, "Psychological Tests, - a Factor in Admission to Eastman School of Music." School and Society, XXX, Dec. 1929, P. P. 889-891.

group." Miss Stanton gives several profile studies with the added personal histories of each student charted and she has found a correspondence in the teachers' ratings of the students' talent with the results of the Seashore Tests. The argument for the Seashore Tests and the reason for their use in the Eastman School of Music is summarized by Miss Stanton in the following statement "The Seashore Tests have been a means of discouraging students whose lack of fundamental musical capacity would have been a constant and in some cases insurmountable handicap. Above all they have tended to promote honesty in the estimate of the ability of the students and have prevented in many cases serious mistakes in the choice of a profession."

Lowell M. Tilson (1) reports that he used the Seashore Tests as a means of comparing the native musical ability and general intelligence of 240 special music students to that of 142 students who are in general courses in the Indiana State Teachers' College. He found the special music students to be far superior in their performance on the psychological tests. He also found that 35.5 per cent of the students whose musical talent scores fall in the lowest quarter make grades in the lowest quarter, while 69.5 per cent with such

(1) Lowell M. Tilson "A Study of the Predictive Value of Musical Talent Tests for Teacher -Training Purposes." Indiana State Teachers College Vol. 3, No. 2, Nov. 1931.

scores make grades below the median, the only .065 per cent make grades in the upper quarter. Sixty-four and five tenths percent of the students with talent scores below the median make grades below the median. He concludes, "It can be predicted that 81.5 per cent of the students with musical scores in the lowest quarter and psychological ratings below the median will make grades below the median and it is not likely that any of these students could succeed as music supervisors even if a few of them could make enough good grades to be permitted to remain in the school until they finish the course. Practically three fourths of the students with talent scores and psychological ratings above the median will make grades above the median. As far as native equipment in musical talent and intelligence is concerned, these students could be successful music teachers or supervisors. Music talent tests and intelligence tests, however, cannot alone predict success, since certain personal traits are required for success besides native capacity. These tests can predict failure."

Dean John Patten Marshall of the College of Music, Boston University, was interviewed by the writer concerning his knowledge and estimation of the Seashore Music Talent Tests. He says,"I found from what data I have, that I came to the conclusion, as a result of my own experience, that the Seashore Tests produced interesting results of a general

nature but they cannot be relied upon when it comes to making a decision as to whether the individual should be encouraged to study music or, rather to make music his career. They showed differences in pitch and volume of sound, but frequently excellent music material resulted in low marks. Many things other than these, enter into the musician's equipment such as creative ability, mental alertness, temperament, and in the case of performers, physical control over hands, lips, etc." It seems only fair to introduce this opinion held by Dr. Marshall and other music educators who have arrived at similar conclusions. In justice to Professor Seashore, however, we must remember that he states emphatically that these other things necessary for success are not guaranteed by his tests. He points out that these other physical and temperamental abilities must be present as well as the fundamental capacities measured by his six tests of talent. Professor Marshall, nevertheless, has found from his experience that the tests are generally indicative of fundamental talent but they are not always reliable because many students of known ability made low scores.

A summary of the history and reliability of the Seashore Tests shows that there is still doubt on the part of some music educators as to the reliability of the tests and the extent to which they may be used. However, the majority of studies tend to substantiate the claims that are made for the tests, and at the

same time, demonstrate the practical purposes they serve. The purpose of this thesis is to determine to what extent the tests may be used in the writer's present situation. The history of the testing movement is rather brief. For some unknown reason many music educators have neglected or refused to apply a scientific measure to their work. Possibly their enthusiasm for the growing importance of music has kept them from realizing that not all children are musical and not everyone should be given elaborate instruction. If talent tests can serve as a means of raising our standard of public school music, we as music educators will find a greater justification for our music teaching and a strengthening of the music program as an integral part of the curriculum of every school system.

III

THE SEASHORE TESTS AS GIVEN IN THE EAST HAMPTON, N. Y. PUBLIC SCHOOLS

In the present study, one hundred seventy-six school children were used in the testing program. Forty-five of these pupils are members of the high school band or orchestra and the remaining one hundred thirty-one are in the fifth and sixth grades. Each grade in the East Hampton Schools is divided into two sections; the division is made according to the intelligence ratings and ability to assimilate work. The fifth and sixth grades have been chosen as the principal subjects for testing, because children of that age seem to be physically and mentally mature enough to begin the study of a band or orchestral instrument. It is true that we sometimes give lessons to children of a younger age, when they show positive indications of talent, but the use of the Seashore Tests is not practical below the fifth grade and no norms are given below that level. At the beginning of the school year of 1932-33 the Music Department of the East Hampton Schools has adopted the policy of not accepting new pupils for instrumental instruction, who are beyond the sixth grade. This policy was adopted because it has been found that the best results have been realized with children who begin the study of an

instrument before reaching the Junior High School age probably due to the fact that it is easier to establish habits of practice in younger children. It may also be true that when a child enters Junior High School, he is subject to a spread of interests and changes which may be social, academic, and physical. The study of music to be most successful should become a "habit" with the young musician, and this habit can best be established before the child reaches Junior High School age. By "habit" we mean the daily discipline of application and practice which is so necessary to artistic and technical development. This must not be interpreted to mean that we are attempting to strain every child to be a professional musician; but in every case a high standard should be our goal. It is logical that this high standard can be developed if the habits of regular and properly directed practice are started in the formative years and special emphasis may well be directed to grades five and six.

PROCEDURE

Only one test was given at a time in order to avoid fatigue and lack of concentration. A period of about thirty minutes was required for each test and intervals of at least one week were allowed between each of the six tests. Usually about one half of the period was used in explanation and directions in order to insure the best possible result from every child. When the children seemed to thoroughly understand

what they were to do the test was given. At this point the criticism may be made that the tests were somewhat too long and that some of them were so monotonous as to cause a loss of concentration toward the end of the record. In order to stimulate concentration and interest a prize was offered to the pupil who scored the highest in each room. As an award is no little incentive to fifth and sixth grade children, this procedure was instrumental in overcoming considerable loss of attention. Placing the tests on a competitive basis was evidently an incentive for the children to do their best.

The members of the High School band and orchestra did not require as much preliminary explanation; consequently giving the tests to them was a much simpler task. They were given the tests under somewhat more favorable circumstances in a smaller room where they could group closely around the phonograph and consequently be in a slightly better position to detect close differences between tones. The fifth and sixth grade children were tested in their own classrooms. These classrooms are not large, however, and every effort was made to bring about the most satisfactory conditions for testing. Each grade teacher cooperated with the tester in arranging the children so that all would be in a position to hear without difficulty.

Each grade in the East Hampton elementary school is divided into two sections --- the "A" section, known as the

"bright" group and the "B" section known as the "retarded or slow group." In general, the "B" group is composed of pupils who are mentally inferior to children in the "A" group, but there are some of the "B's whose I. Q. ratings compare favorably with the lower third of the A's. Their difficulty seems to be a lack of concentration and application. Chart I gives a summary of the average of the six tests in each grade. It may be seen from the copy of the norm scale (Page 14) given by Seashore, that it is a comparatively easy matter to find the correct score (centile score) of each child or adult. In correcting the test, the percentage of right answers is referred to the norm scale; for example let us suppose that an adult has eighty percent of the answers correct. Referring to the scale we find that he has a centile ranking of 50 which represents average musical ability (neither superior nor inferior). Consulting the scale again we find that to be rated at the same score of 50 the child in grade eight would have to get seventy-six percent of the answers correct, the child in grade seven, seventy three percent, the child in grade six, seventy-one percent, and the child in grade five, sixty seven percent. Juniors and seniors in high school are treated as adults in scoring their results. Norms for the Intensity, rhythm,time, consonance and tonal memory tests are arranged similarly to the pitch test. The

centile score of every child tested was arranged on index cards so that it may be available for reference any time a pupil is being considered for instruction on an instrument.

In chart Number I, Page 35, it will be seen that all groups except the 6A grade are considerably below average. The 6A grade with a 49.5 is only one half point below the average 50 which is sufficiently close enough to class them as an average musical group - - - that is - - - they are neither superior not inferior musically and could be considered a fairly good "risk" as a group. However, in selecting pupils we go on the basis of the individual charts as shown further on in this thesis. Any other procedure would work an injustice on some members of the "B" group.

Chart II gives a comparison in the score of the six tests between the A or bright groups and the B or slow groups. As in Chart I the average 50 represents an average score as worked out in the scale for the tests by the author, Carl E. Seashore. It will be noted that the A groups' score is somewhat below the average 50 while between the A group and B group and wider margin of difference is shown. In a general interpretation of this chart it appears that the children in the A grades in the East Hampton Schools are slightly below average in musical talent while the children in the B grades are inferior to the A's and are considerably below average. While the difference in scores between the A and B groups is not wide, there is an indication that children of normal or superior mentality are <u>in general</u> superior to the B or slow groups in musical talent.

SUBJECT Chart No. 1 SHEET NO.

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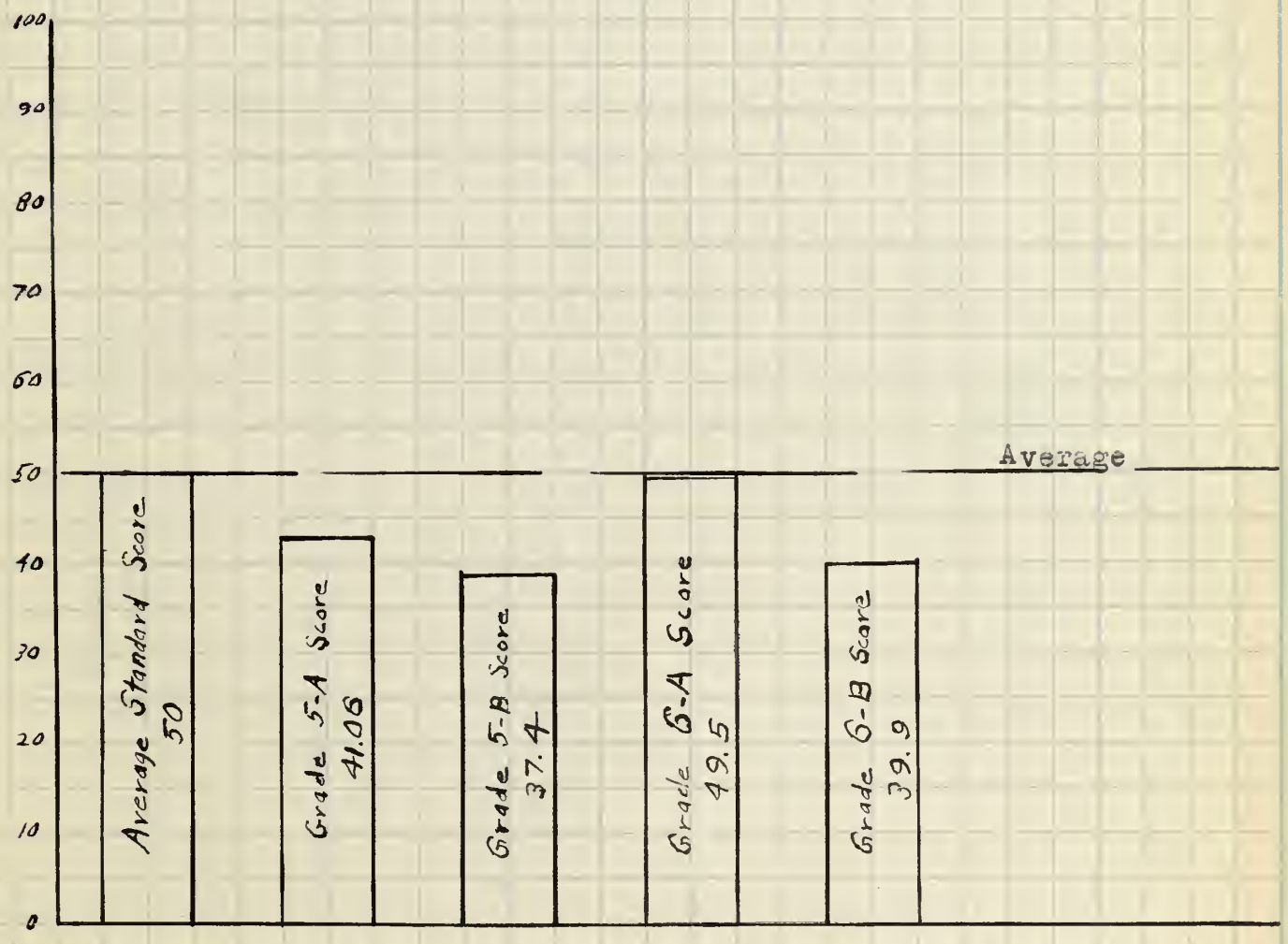
This chart shows the average of the centile sccres for each grade based upon the six tests. A comparison with the standard average score may be seen.



SUBJECT Chart No. 2 SHEET NO.

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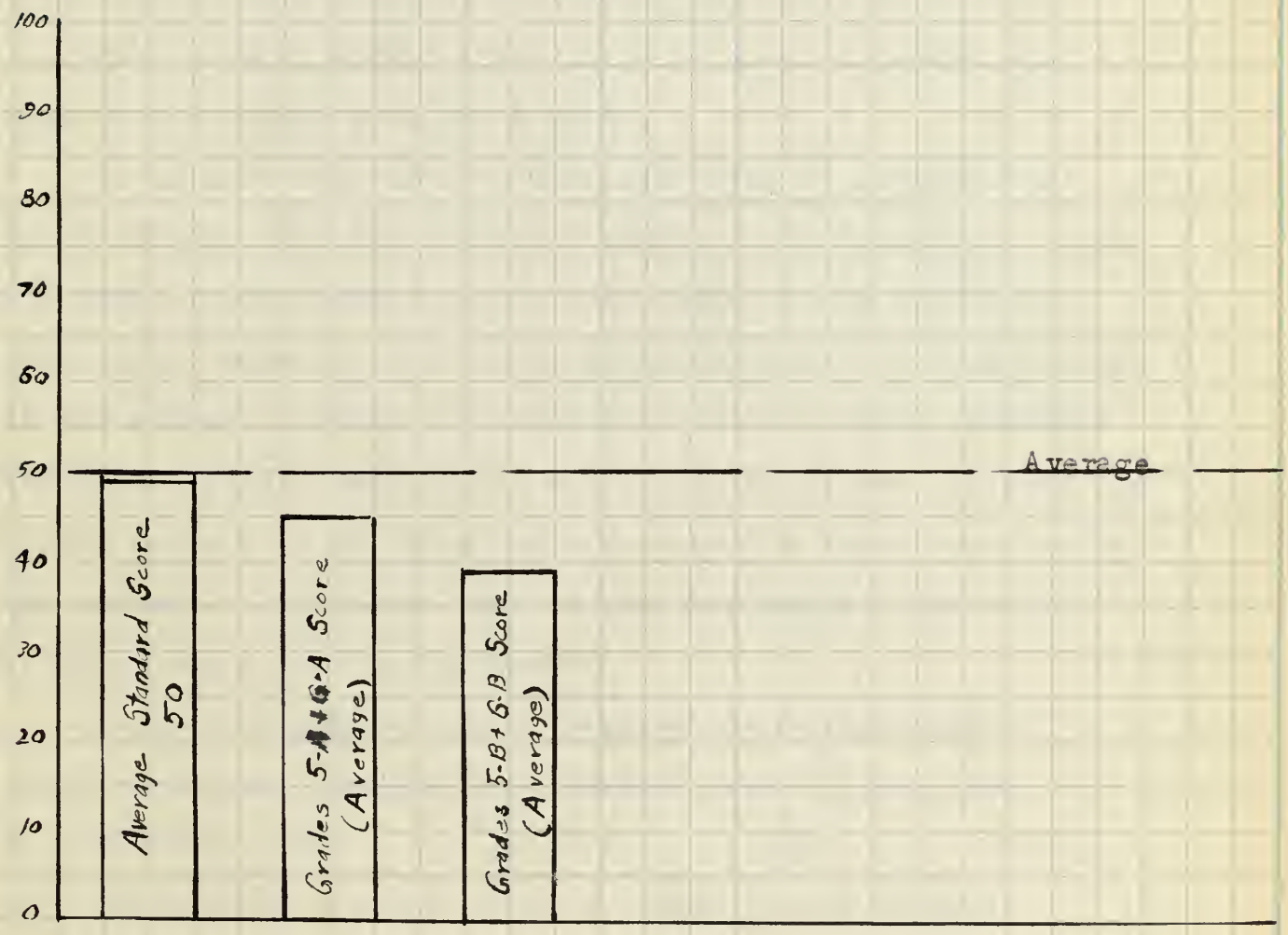
This chart represents the centile averages of the six tests of the "A" group as compared to the "B" group. (The scores of grades 5A and 6A were averaged together and the scores of 5B and 6B were averaged together thus giving the "A" and "B" group scores) It will be noted that the "A" group shows a fair but not marked superiority in talent over the "B" group.



For practical purposes this indicates that our chances of finding the best subjects for instruction on an instrument lie with the A grades because as a group they appear to be more talented musically and they also have a higher intelligence which means that they should be able to learn more easily. Too much significance should not be attached to this conclusion. However, because this shows only a general tendency. There are individual cases, shown in profile charts further on in this thesis which indicate that there are children in the B grades who show marked superiority in musical talent over many of the children in the A group.

It is only fair under these conditions to compare the scores of the Band and Orchestra members with the entire fifth and sicth grade scores and not with those of the bright or slow groups separately. The wide difference of 18 points noted in the scores of Chart III means that either musical training improves a pupil's ability to score high on talent tests or that pupils who are in the band and orchestra are there because they are musical. It follows that if they are musical they will probably score well on the tests.

We have no other means of testing the achievement of children who have studied instrumental music in the East Hampton schools and we can judge their progress only from our own observation. We can, however, point to the evidence

gathered from the several experiments of other talent testers which indicate that musical training does not bring about improvement in talent test scores. N. J. Klaur and Carl E. Seashore (reviewed in the section of this thesis entitled "History of Previous Studies") have covered this field quite thoroughly and have found no significant improvement in the results of tests even when pupils had been given intensive drill. There has been no evidence found to date which shows that musical training brings about an improvement in talent scores. In my experience in the East Hampton Schools I find that most of the untalented pupils drop their study of an instrument of their own accord after a reasonable period of time. Therefore it seems logical to conclude that the group gradually becomes selective as these untalented members are eliminated and a fairly high score on the Seashore Tests is a natural result.

Special attention should be devoted to the Pitch Test. It is generally recognized that a sense of pitch is absolutely essential for success in music. Faulty rhythm and time are not always a barrier to the successful soloist for there are many good performers who are erratic in this respect. A good sense of time and rhythm is necessary to the group musician and the lack of such equipment would make successful playing in an orchestra or band impossible.

A good sense of pitch, however, is of fundamental necessity to every musician whether he be vocal or instrumental soloist,

or member of an ensemble. Stringed instrument players, for example, require a more sensitive discrimination than pianists, because the pianist either strikes the correct note or misses it entirely, while the violinist depends on the sensitiveness of his ear to insure his playing "in tune."

Chart IV gives a picture of results of the pitch test. There is a notable difference in score between the band and orchestra members and the "A" group and there is also a fairly wide difference between the "A's" and the "B's." It can be seen from the chart that band and orchestra members almost doubled the pitch score of the average of the combined "A" and "B" groups. Again we cannot justify the use of these figures to claim that the training the band and orchestra members have had, has enabled them to score so much higher than the other group, as it was pointed out in the interpretation of the general averages for the six tests, the band and orchestra are a selected group that has become interested in music and probably have been able to remain in the band and orchestra because they have sufficient talent.

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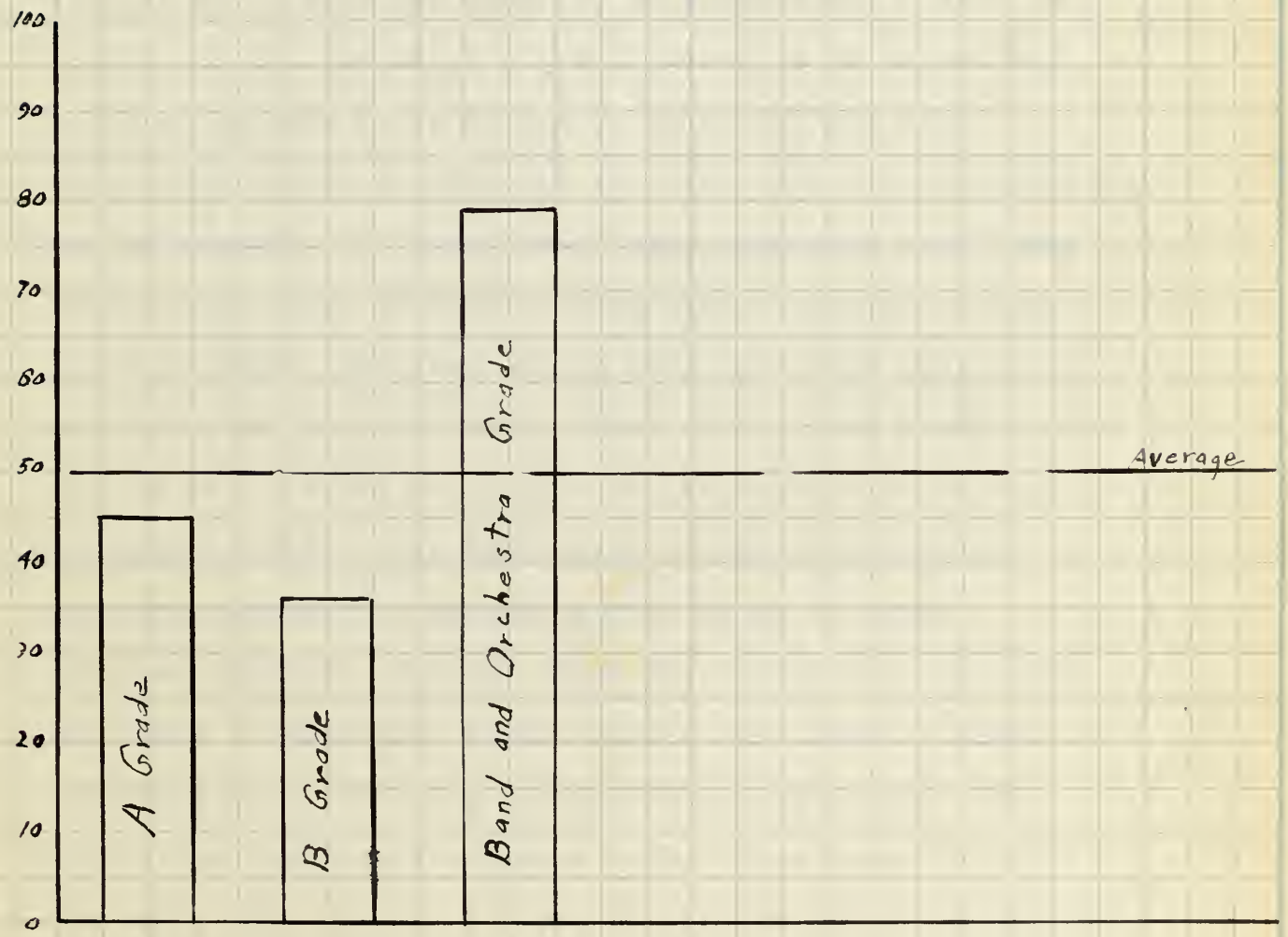
Chart No. 4 Centile Score of Pitch Test

SHEET NO.

FILE

DATE



CASE STUDIES.

It may be well at this point to introduce several individual case studies taken at random from the records of children who were given the Seashore Tests. As these individual charts are selected cases, they may be considered as fairly representative of the general group that was tested. The purpose of introducing these case studies is to show how they may be interpreted - that is - whether or not the child shows indications of talent and in what respects he is strong or weak, with the view toward attempting to discover for what type of instrument he may be adapted. It has already been suggested that those with a good sense of pitch may do well on violin or some other stringed instrument which demands a keen "ear" in order to play in good tune. Those with a good sense of time and feeling for rhythm and intensity may do well on drums or some other instrument of percussion which does not necessarily suppose a good sense of pitch but does demand a capacity for time, rhythm and intensity. The sense of intensity is not always the least of these three requisites for the successful percussionist. The writer has known many drummers with a fine sense of time and rhythm who were so lacking in the feeling of intensity that they were unable to adjust their playing to conform

properly with the fine shadings of loud and soft, thus seriously hampering their success in music. The sense of consonance is an absolute requisite of the pianist or harpist who must play in chords most of the time. If he is unable to distinguish which chords blend well and are harmonious from those which are discordant, he will be seriously handicapped. Of course, there are musicians who have attained fair success by virtue of hard and persistent study but lacking these talents they are generally "mechanical" in their playing. The writer suggests that everyone is familiar with the type of musical performer (I say performer, rather than musician) who can play a selection note perfect but almost entirely without feeling, interpretation or originality. It is with these facts in mind that the writer presents the following charts with notations and suggested interpretations.

Key to the following Profile Charts

P ---------- Pitch

I ---------- Intensity

T ---------- Time

R ---------- Rhythm

C ---------- Consonance

Tm ---------- Tonal Memory

These charts are the result of thirty-nine typical case studies.

FORM 102-A

SUBJECT Case No. 1 SHEET NO.

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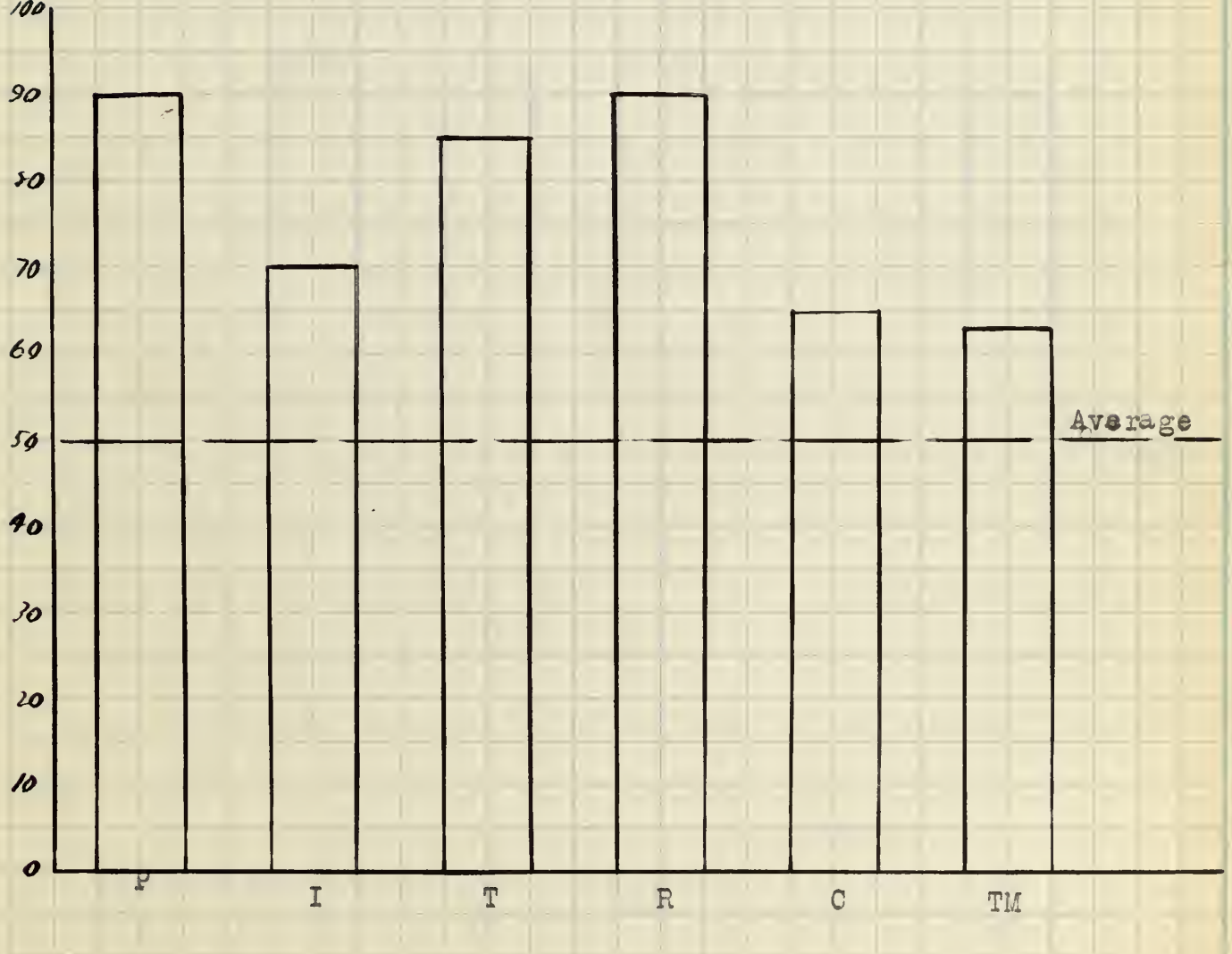
This 11 yr. old 5A grade girl is an interesting case study. She is very slow in school work and has a low mental rating. Her chart shows positive indications of an excellent musical ability. She will be given lessons.



FORM 102-A

SUBJECT Case No. 2. SHEET NO.

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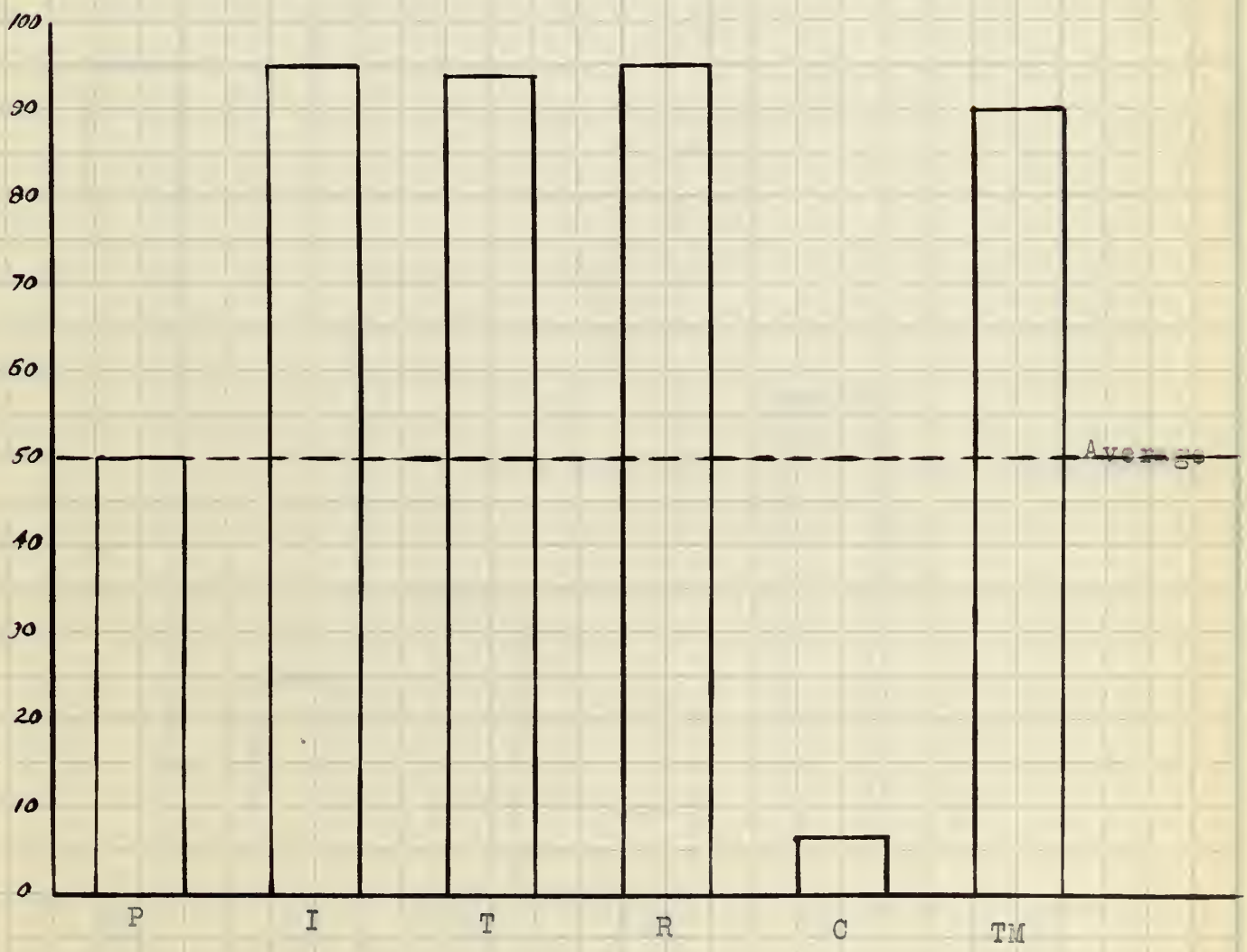
This girl's record is very high with the exception of consonance. She is in grade 6A and she shows positive indications of talent.



b
I
L
B
C
LN

SUBJECT Case No. 3. SHEET NO.

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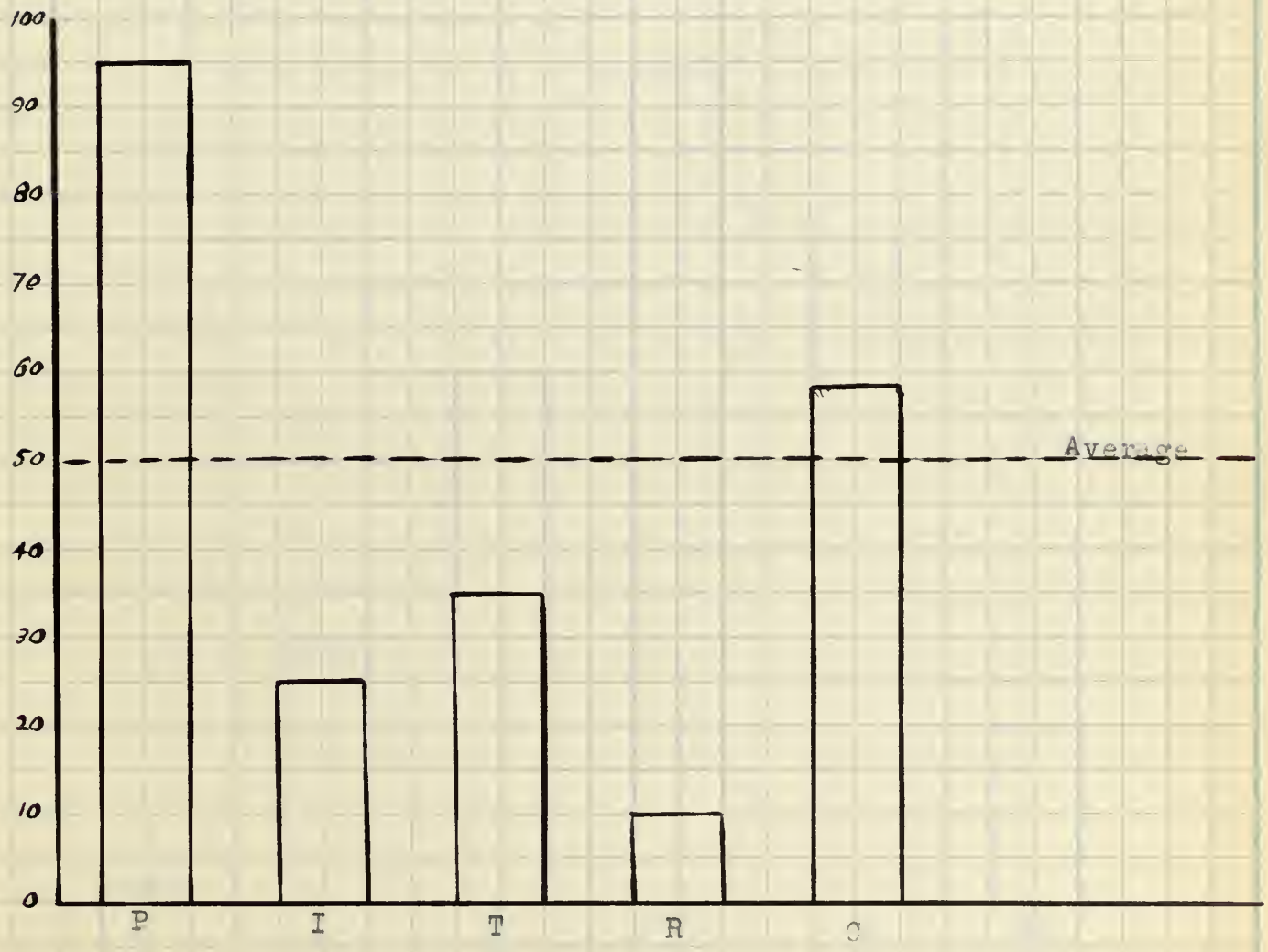
10 yr. old girl - grade 5A - studying violin but progressing slowly. Her only real indication of talent is shown by the pitch score.



SUBJECT Case No. 4 SHEET NO.

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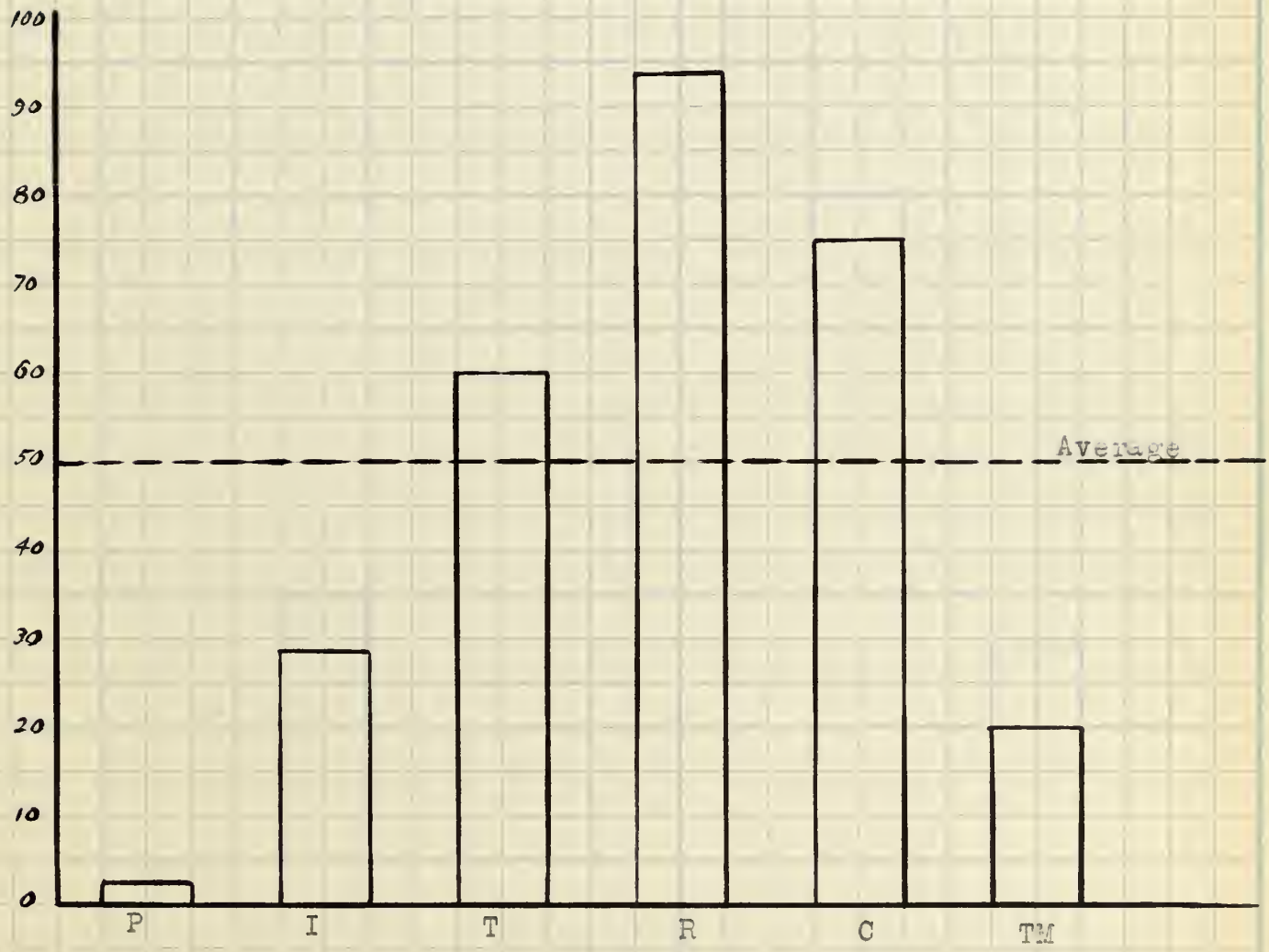
10 yr. old boy - grade 5B -
Possibility as a drummer because of his high rhythm and good time scores. He is low in the other essential senses except consonance.



SUBJECT Case No. 5 SHEET NO.

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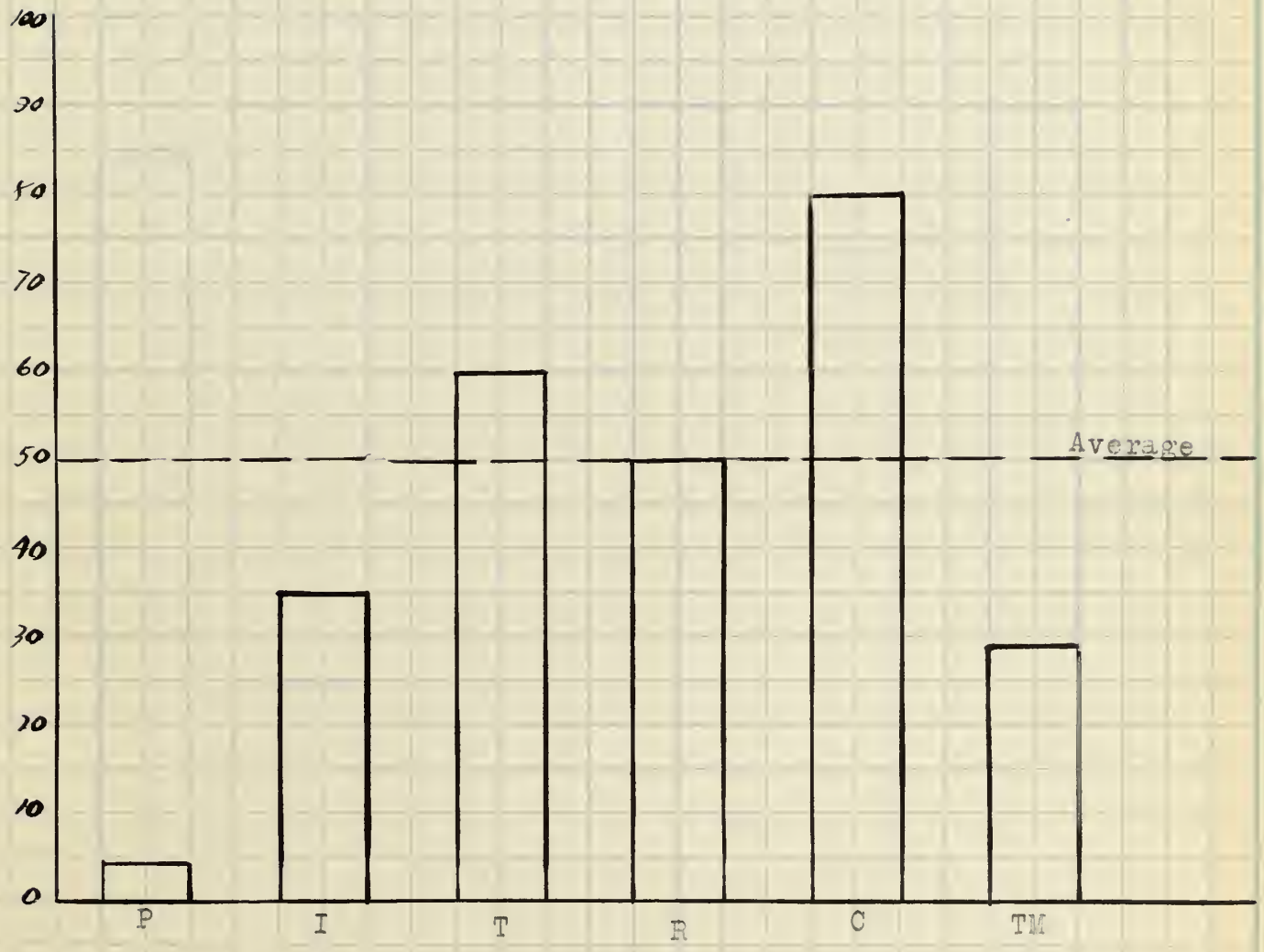
11 yr. old boy - grade 6A - average student - excellent attitude in classroom. Has been studying clarinet and while his talent is limited he is an exceptionally hard worker and is doing fairly well.



SUBJECT Case No. 6 SHEET NO.

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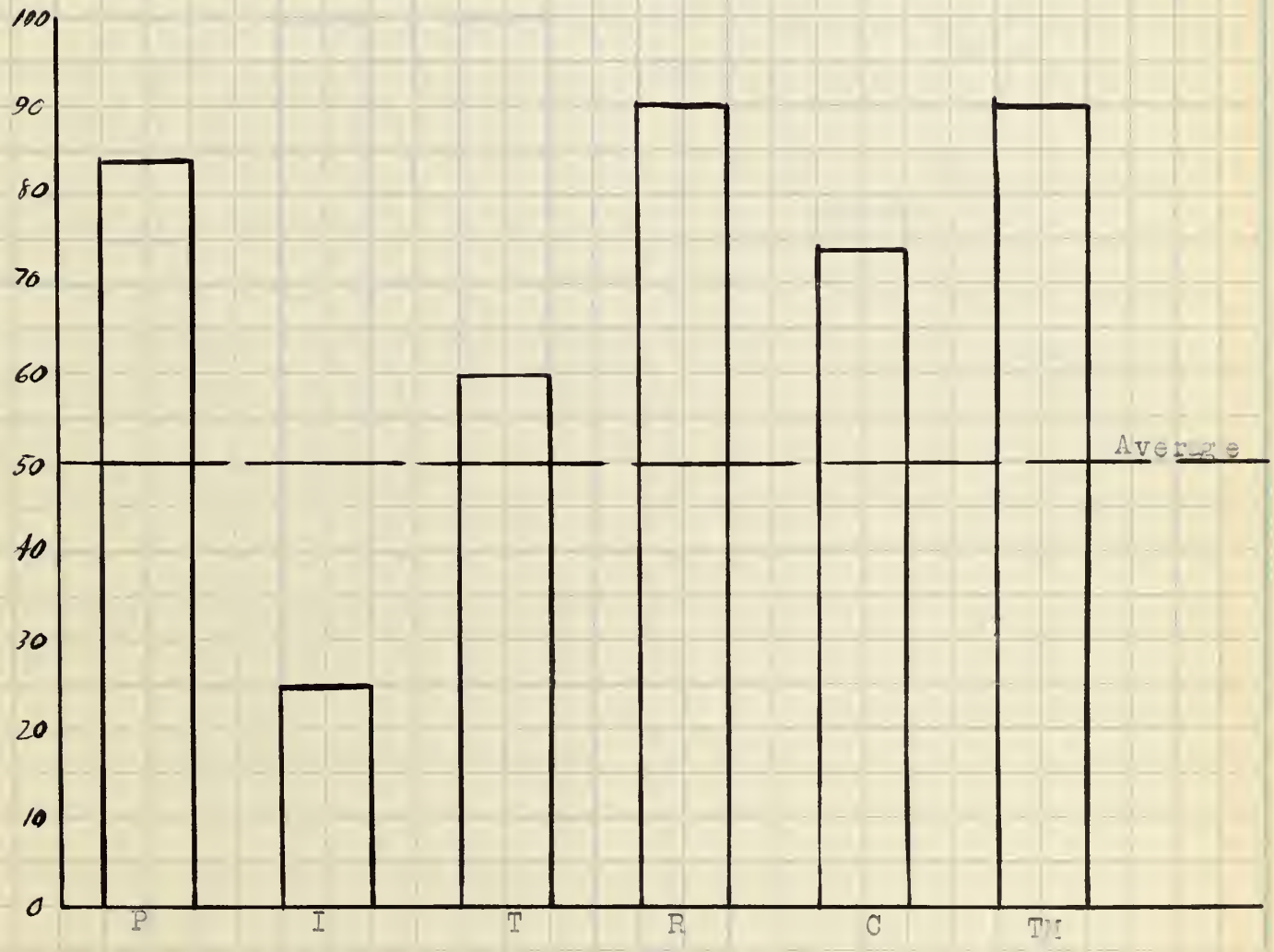
10 yr. old boy - grade 5A - studying trumpet in the school and is making fine progress. His record with the exception of intensity shows positive musical talent.



SUBJECT Case No. 7 SHEET NO.

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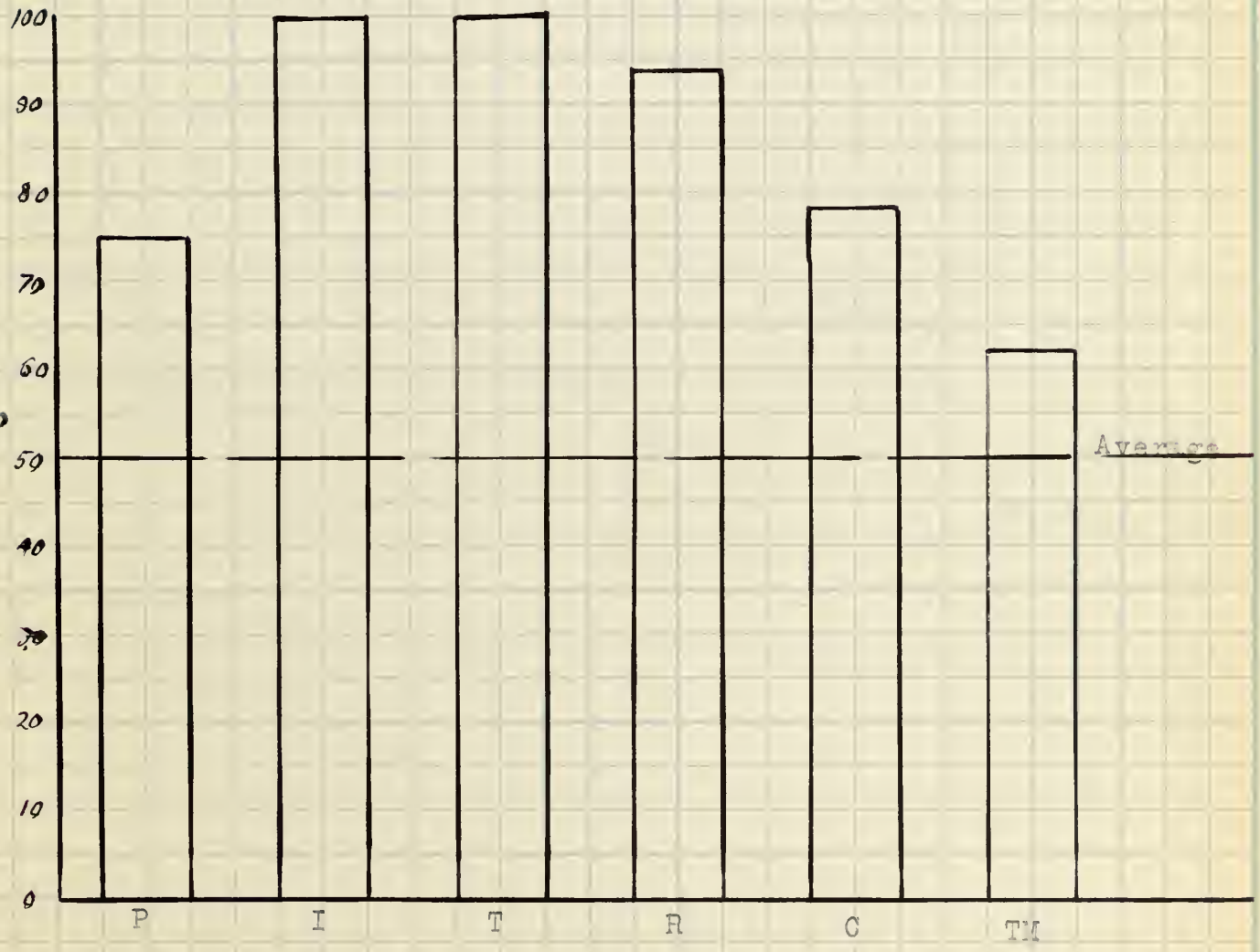
This 11 yr. old girl in grade 6A scored the highest of any child in the grades. She has never had any instruction in music other than the regular class singing perior. She is excellent "material" and will be given instructions on violin.



SUBJECT Case No. 8 SHEET NO.

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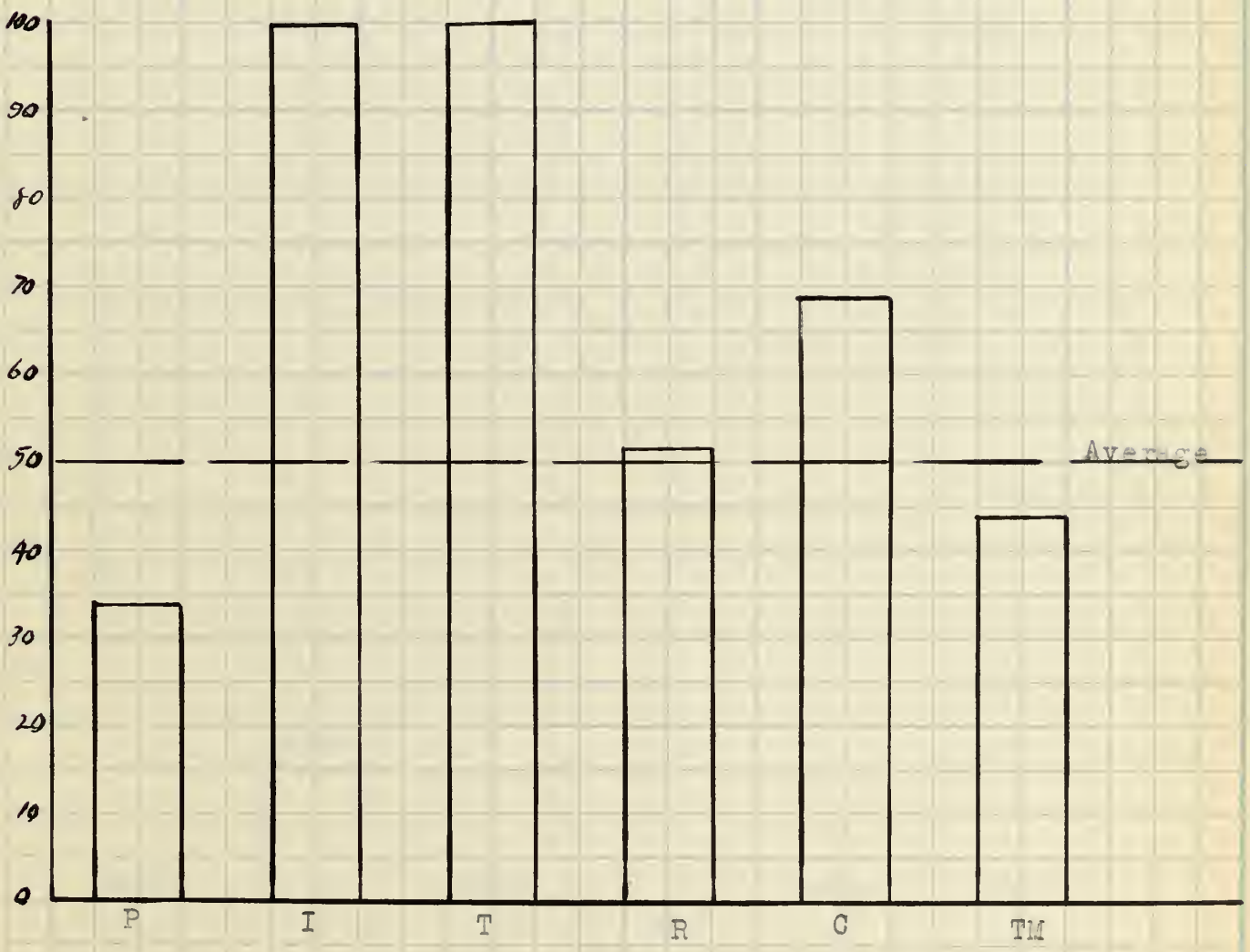
11 yr. old girl - grade 6A - her classroom work and attitude are good. Her sense of pitch appears to be low but her general record is good. Time and intensity are superior.



SUBJECT Case No. 9 SHEET NO.

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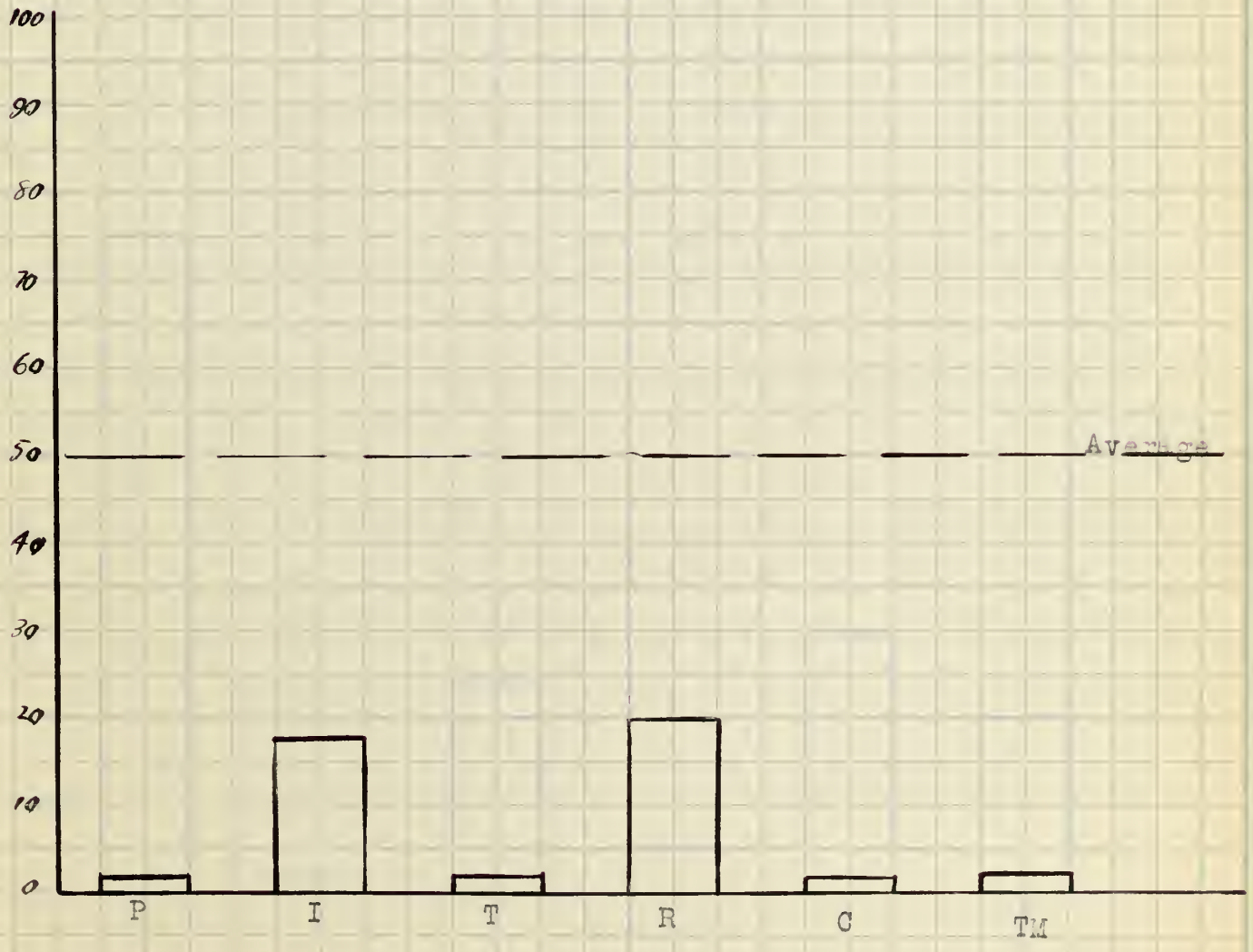
10 yr. old boy - grade 5B - Shows no indications of talent in any of the six tests.



FORM 102-A

SUBJECT Case No. 10. SHEET NO.

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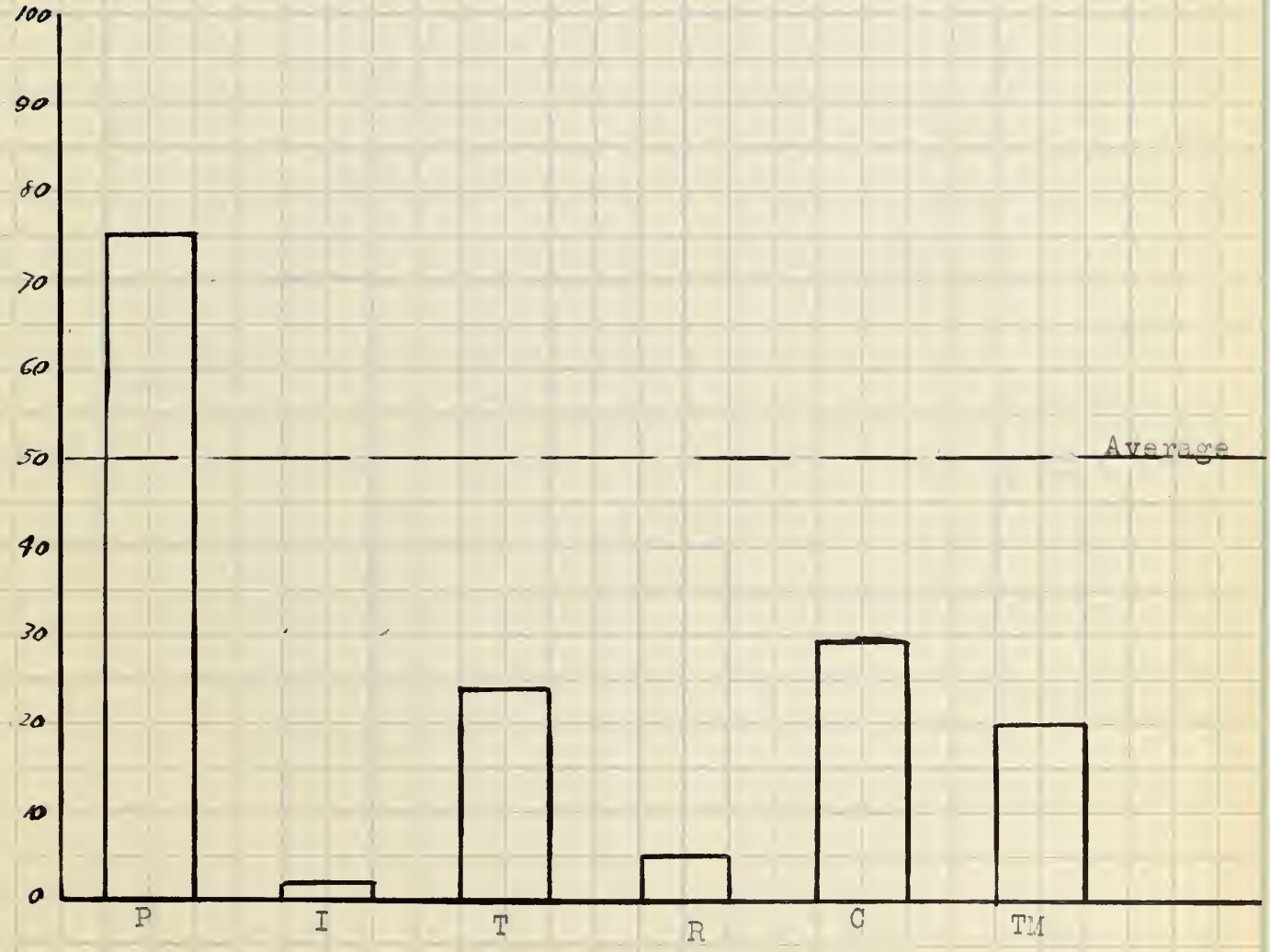
This 10 yr. old 5A grade girl has studied 'cello two and one half years and is making slow progress. Her pitch score is good but other scores are poor.



SUBJECT Case No. 11 SHEET NO.

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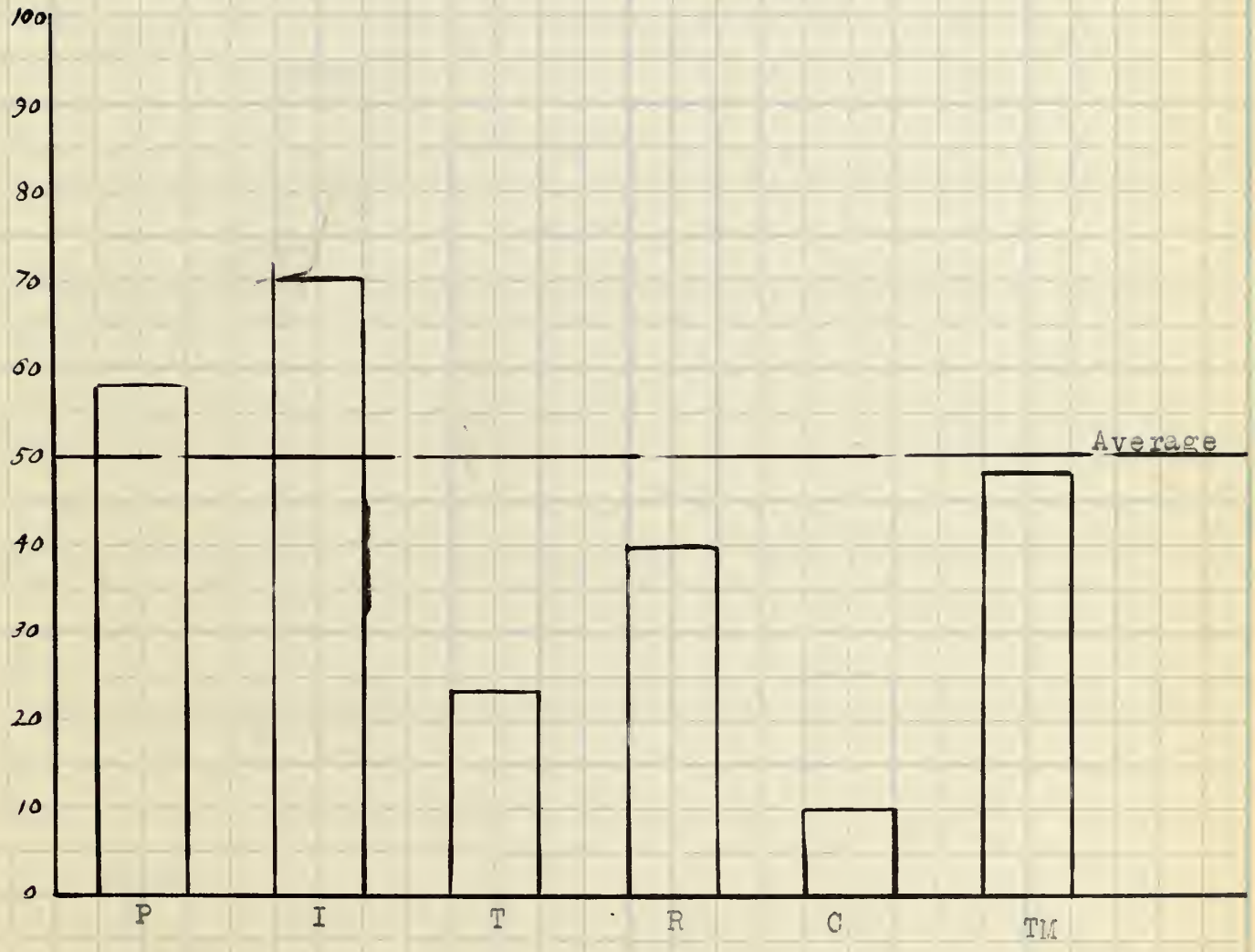
11 yr. old boy grade 6A. Exeellent student and has a high mental capacity. It will be observed, however, that his talent is below average. He studied trumpet for six months but gave it up as he did not care for it and his progress was slow.



SUBJECT Case No. 13 SHEET NO.

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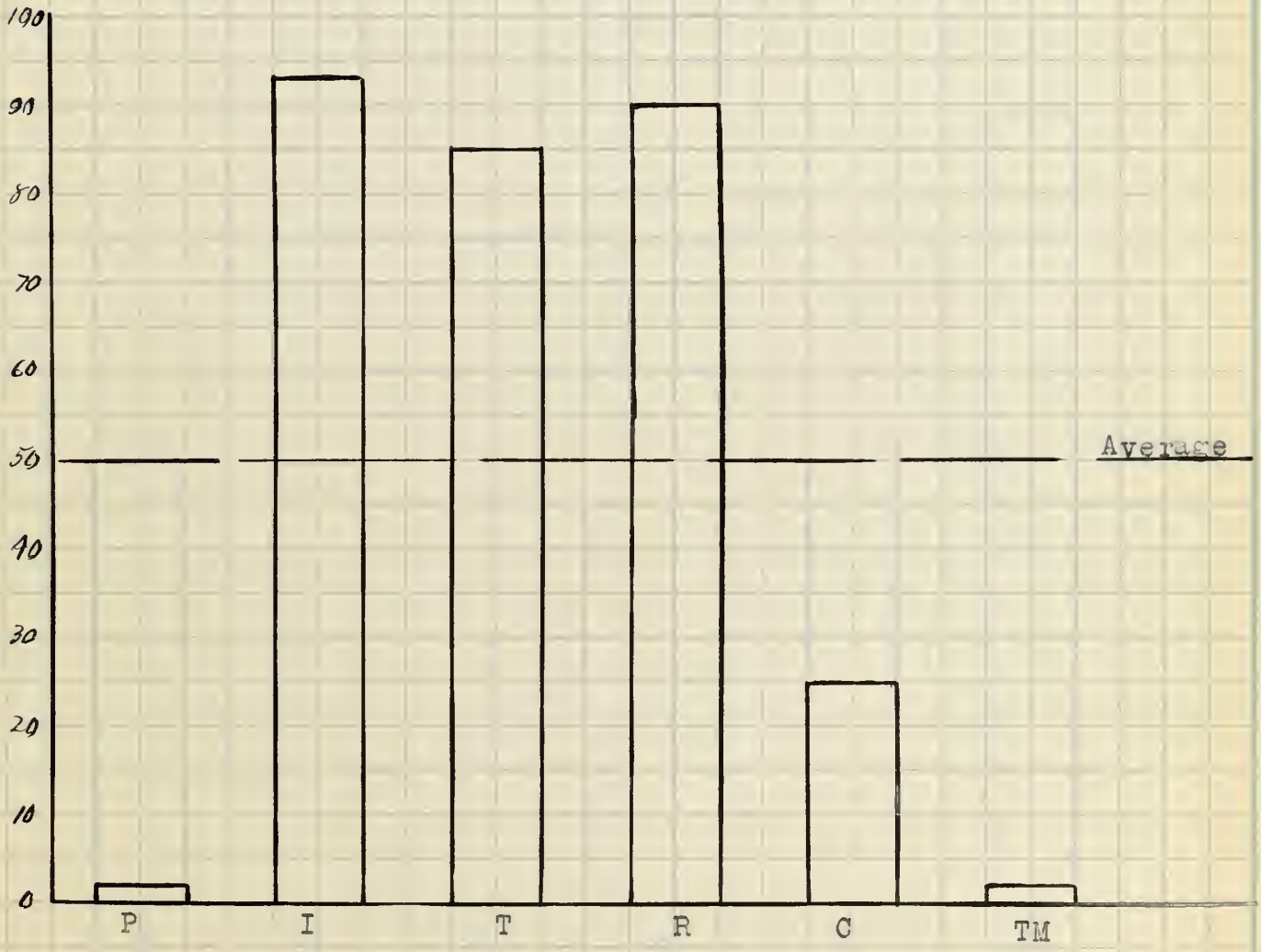
11 yr. old boy, grade 6B. Here is excellent material for drums because of the fine senses of intensity, time and rhythm. Pitch and tonal memory are the other extreme with an 0 rating.



SUBJECT Case No. 13 SHEET NO.

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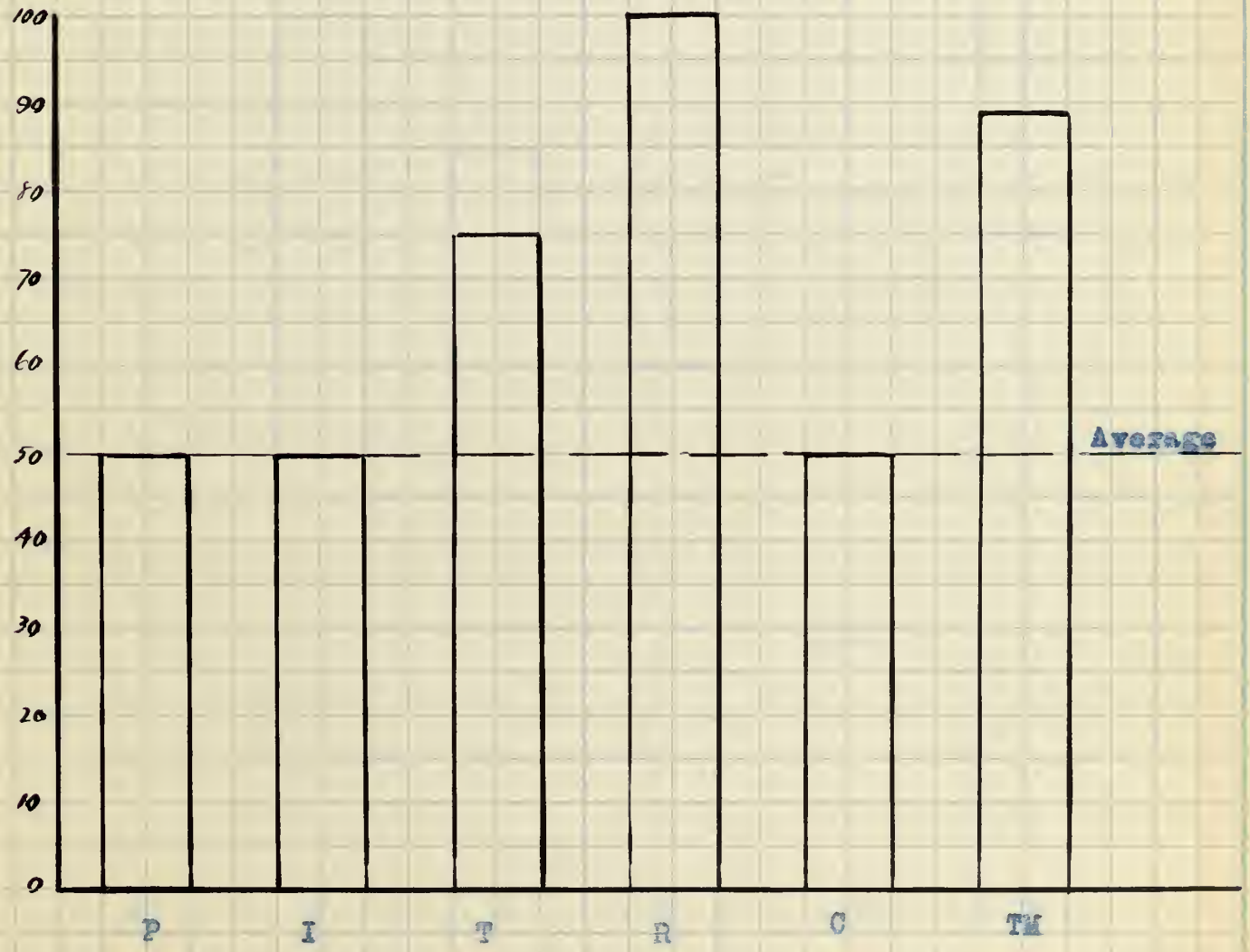
11 yr. old girl - grade 6A - record shows her to be above average in talent. She is studying clarinet and is making better than average progress.



SUBJECT Case No. 14 SHEET NO.

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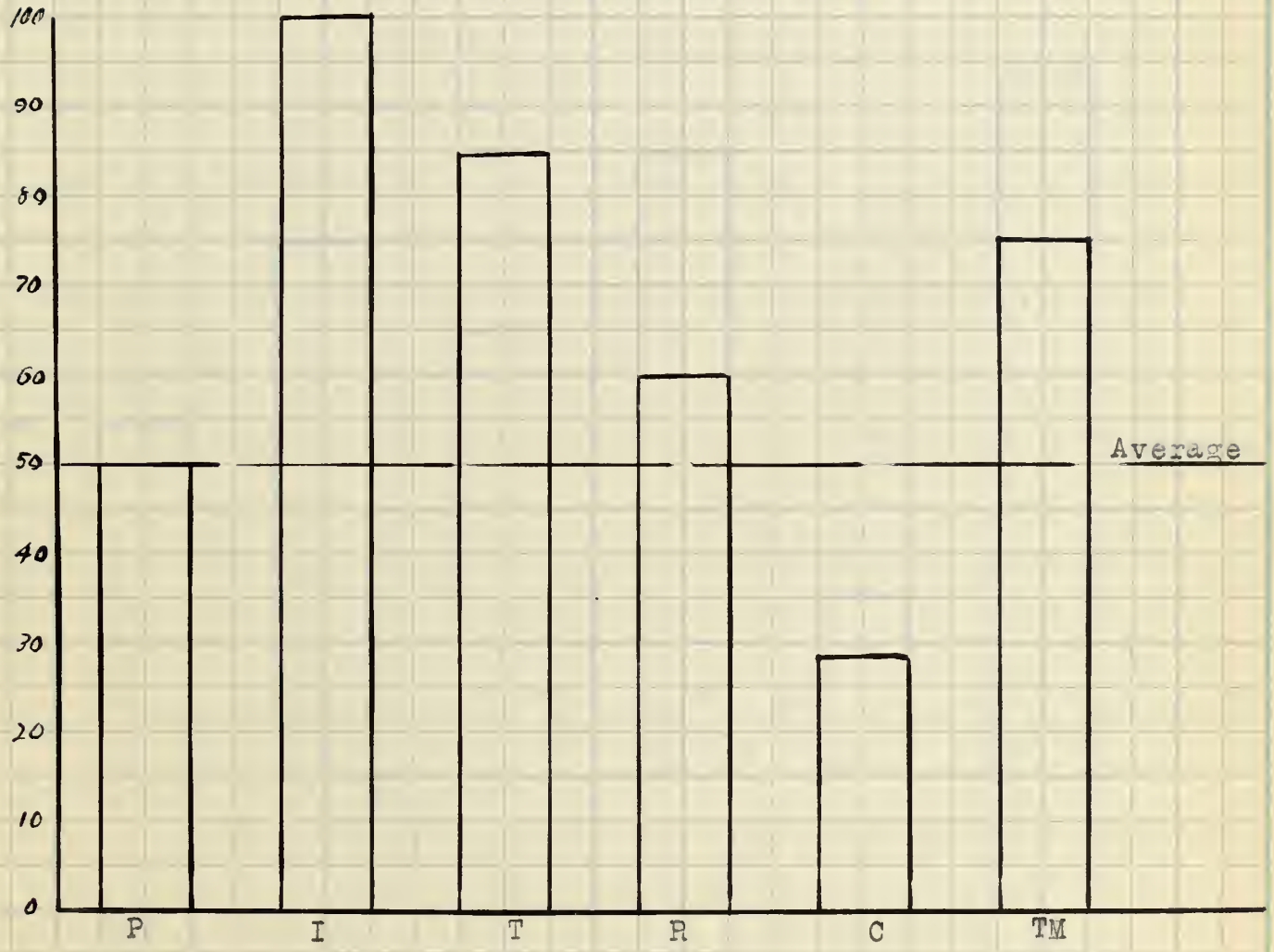
11 yr. old boy - grade 6A. Here is a fairly good record and this boy is deserving of a chance to study an instrument.



SUBJECT Case No. 16 SHEET NO.

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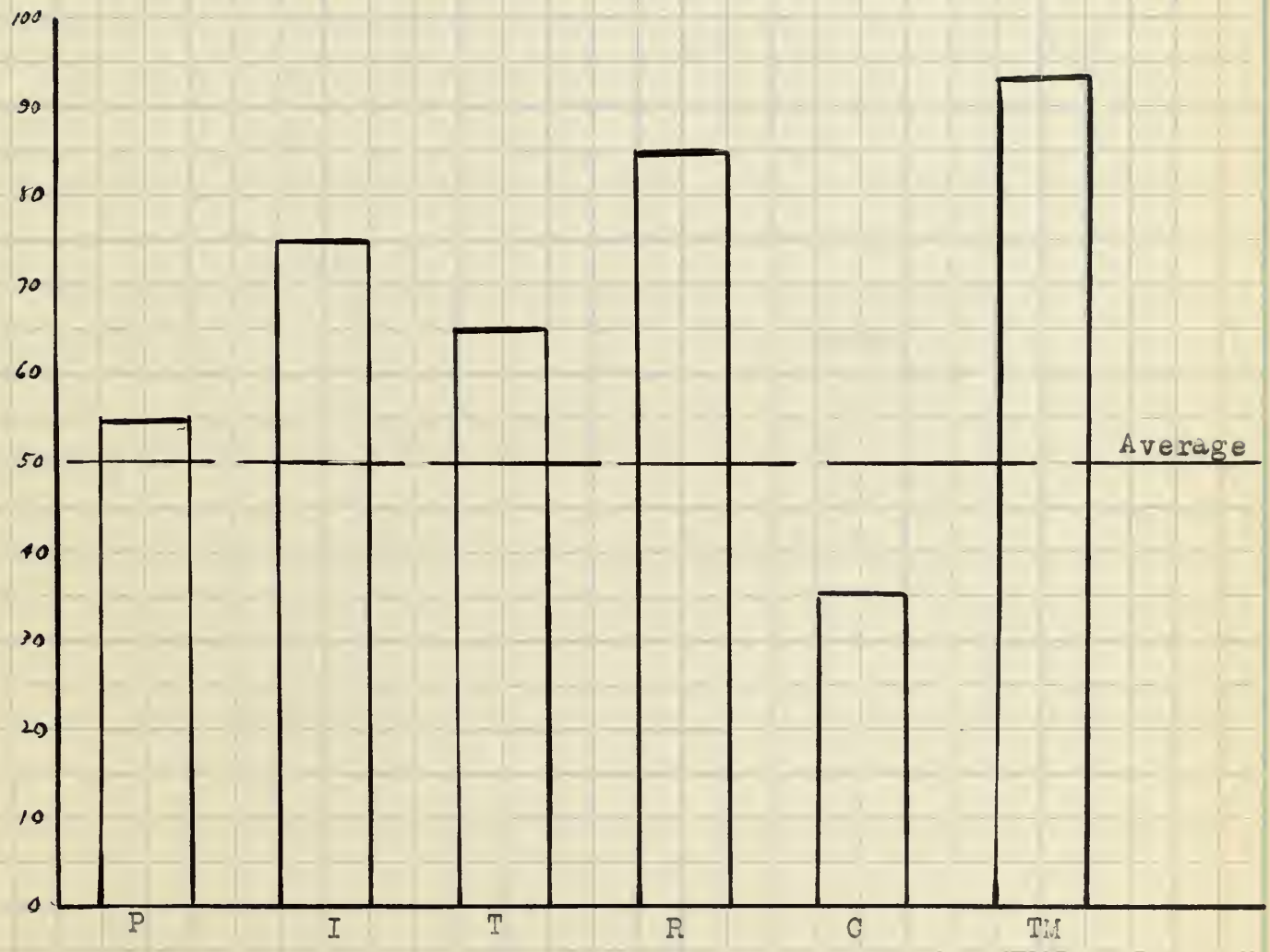
12 yr. old girl -grade 6A. Does exceptionally well in singing and studies piano and dancing privately. Her record shows her to be well above average.



FORM 102-A

SUBJECT Case No. 15 SHEET NO.

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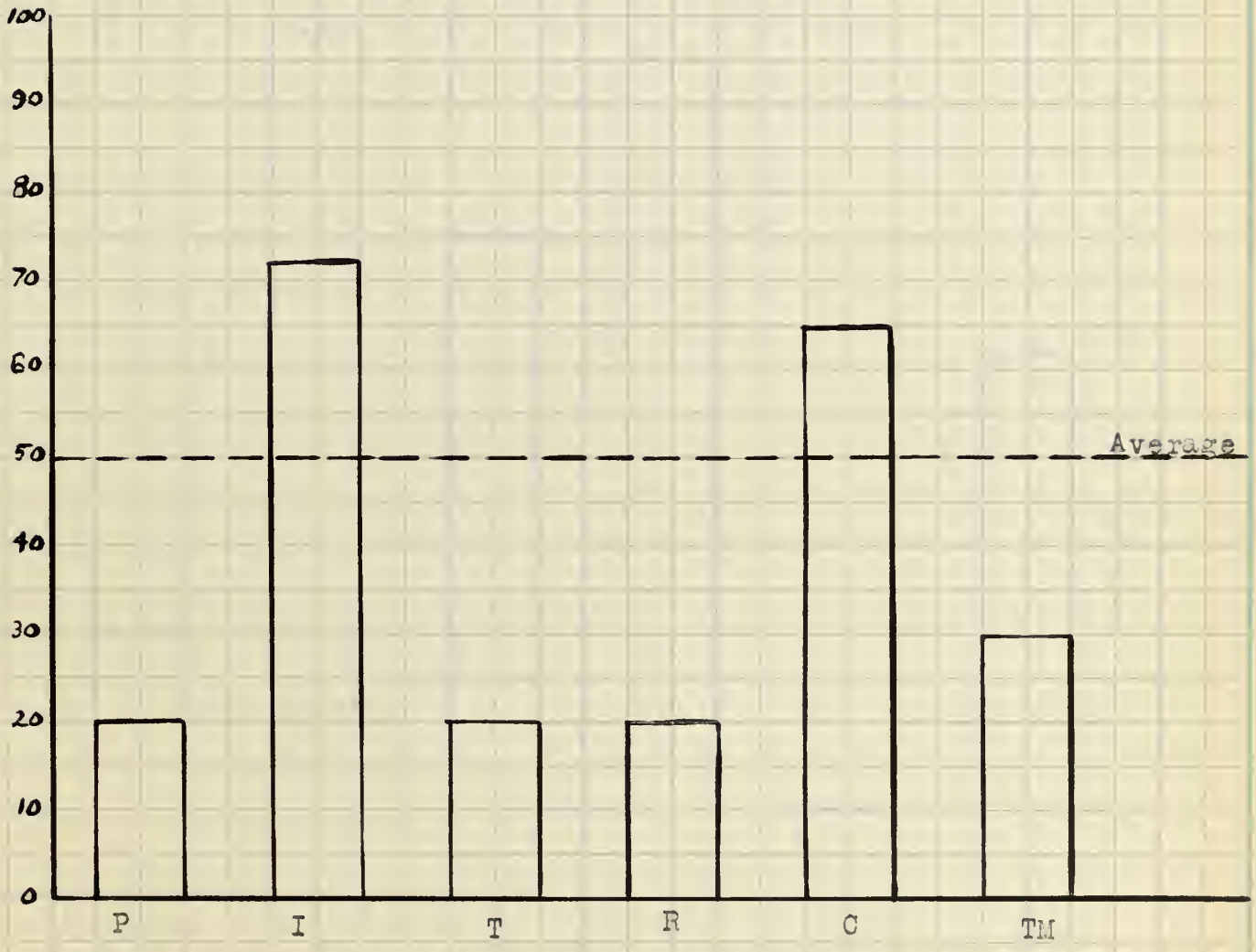
11 yr. old boy - grade 6A. His general score average does not warrant giving him lessons on an instrument.



SUBJECT Case No. 17 SHEET NO.

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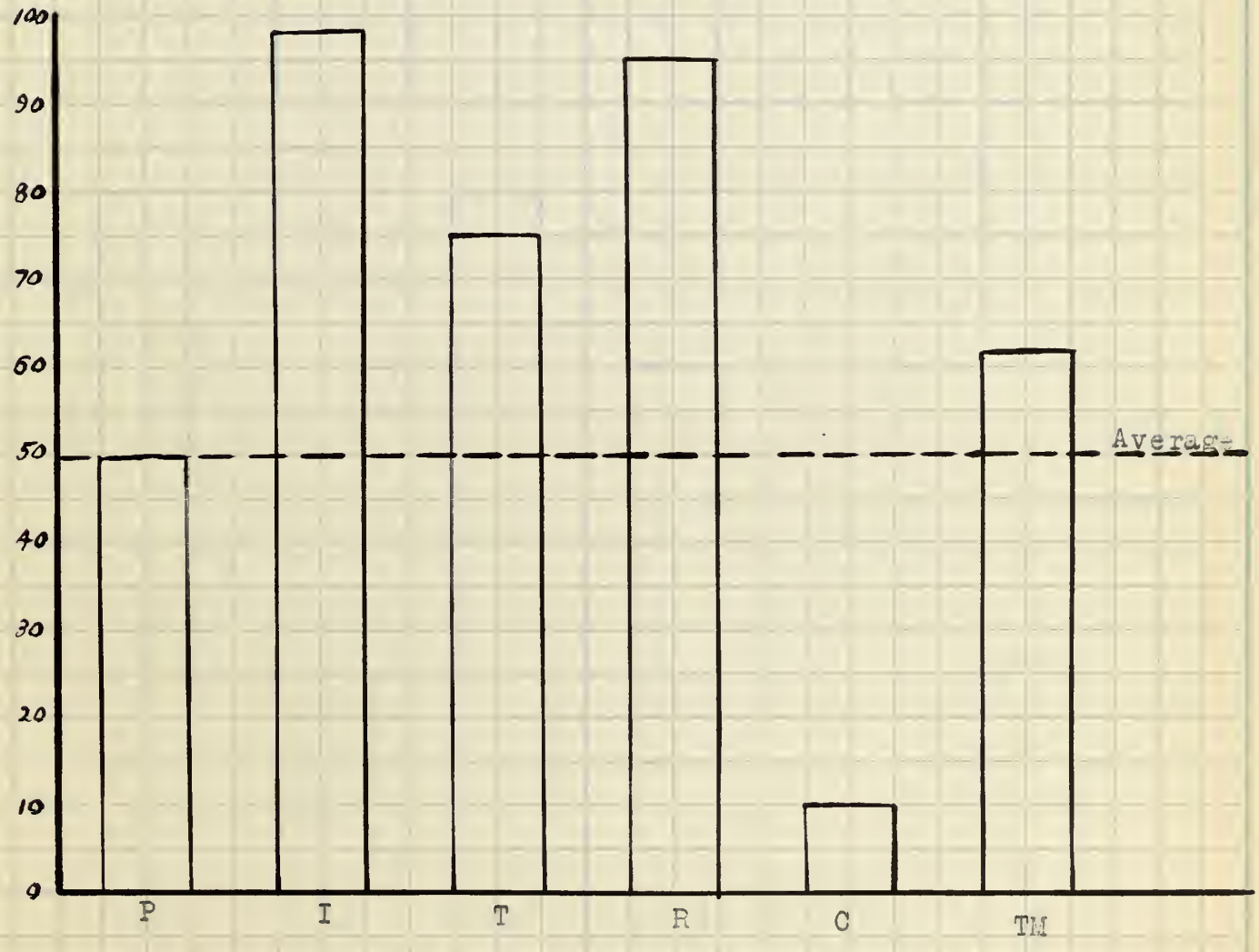
10 yr. old boy - grade 5B - mentality is low. Talent chart shows general average is high enough to warrant musical instruction.



SUBJECT Case No. 18 SHEET NO.

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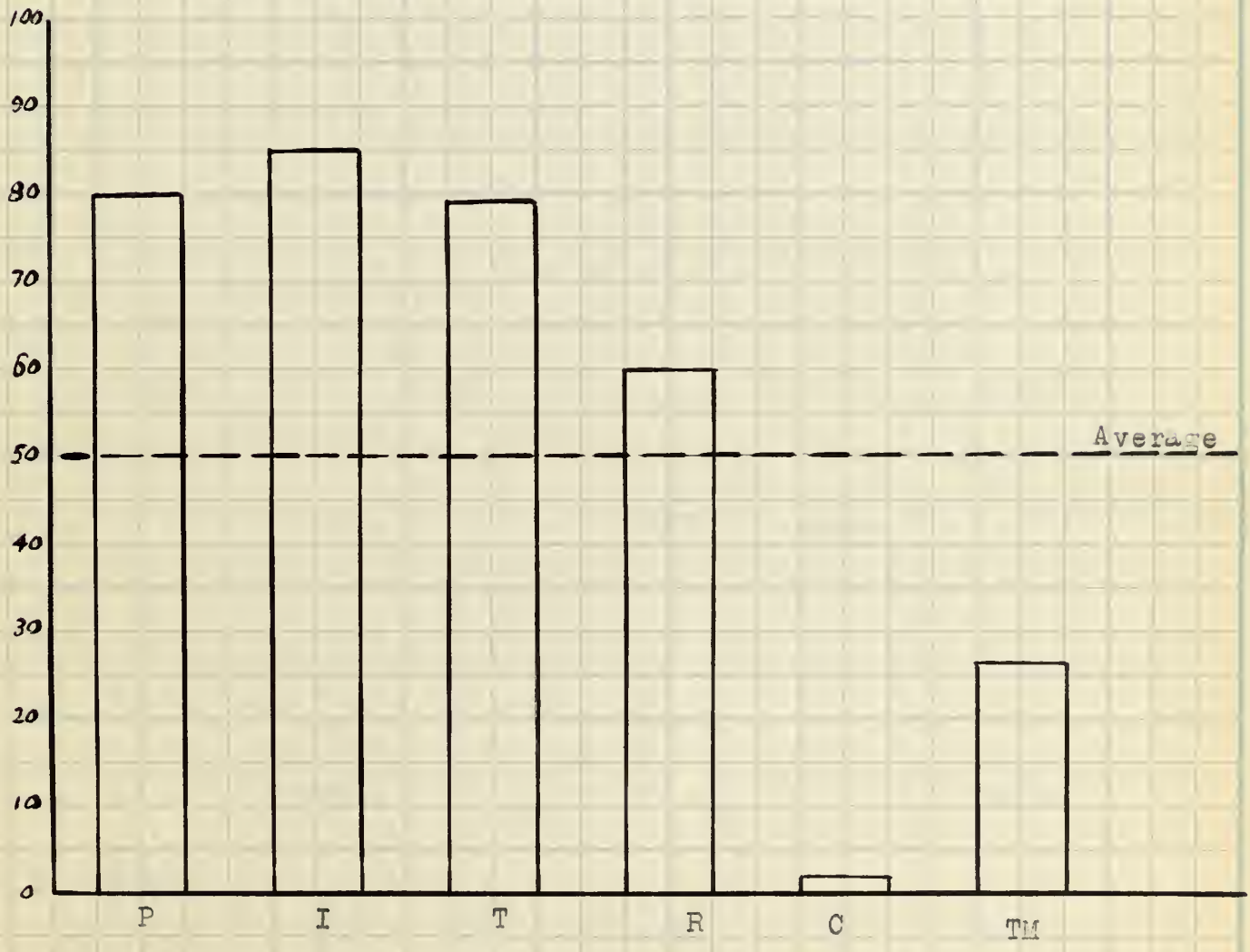
11 yr. old - 6A grade boy - plays violin in Junior Orchestra. Extremely nervous disposition is handicapping his rather good talent.



SUBJECT Case No. 19 SHEET NO.

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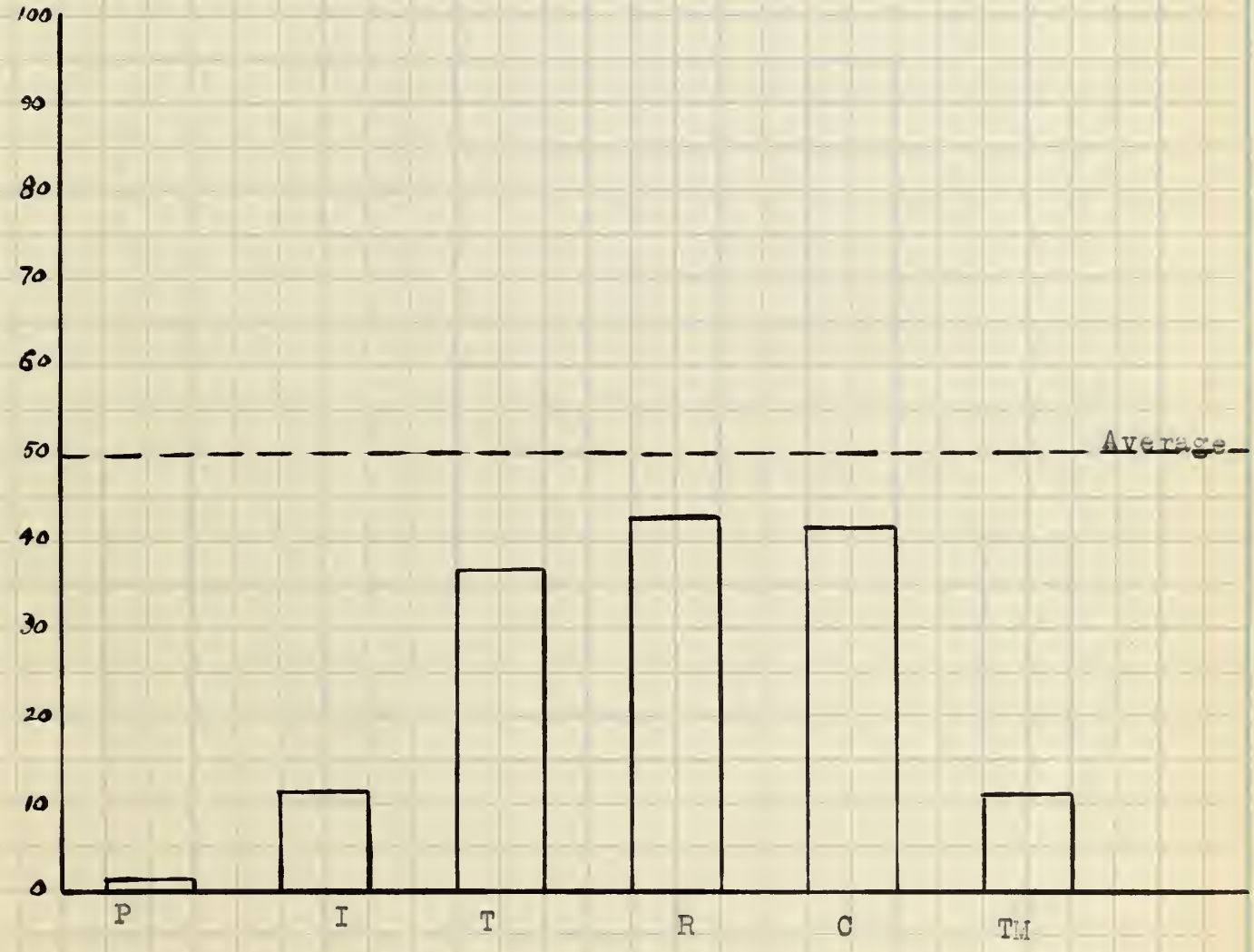
11 yr. old girl - grade 5A. No indications of talent appear on this chart. She is not good material for music study.



SUBJECT Case No. 20 SHEET NO.

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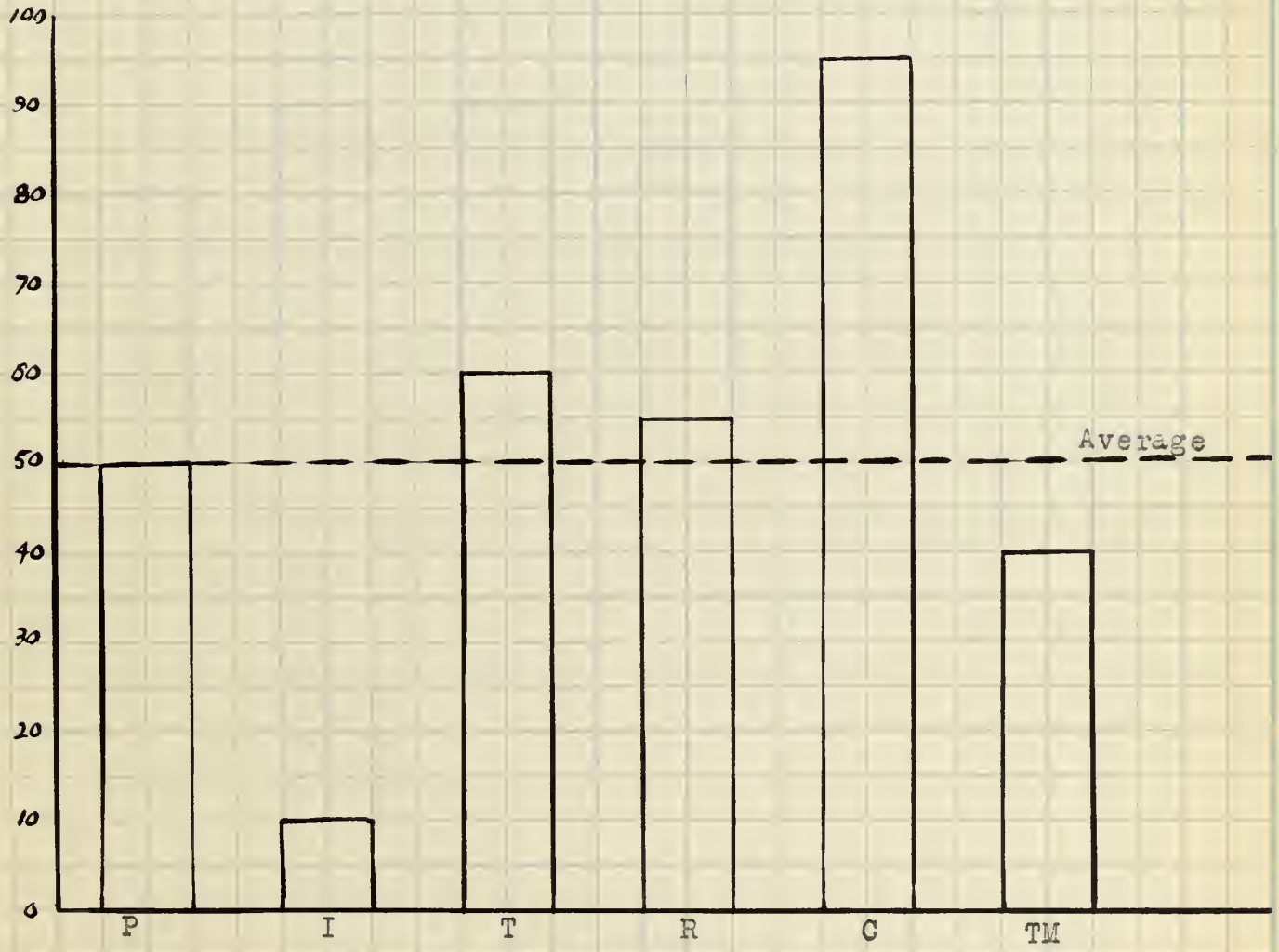
This boy is a high school sophomore and a member of band and orchestra. He is interested in music but has shown no outstanding ability or progress. He is about average material.



SUBJECT Case No. 21 SHEET NO.

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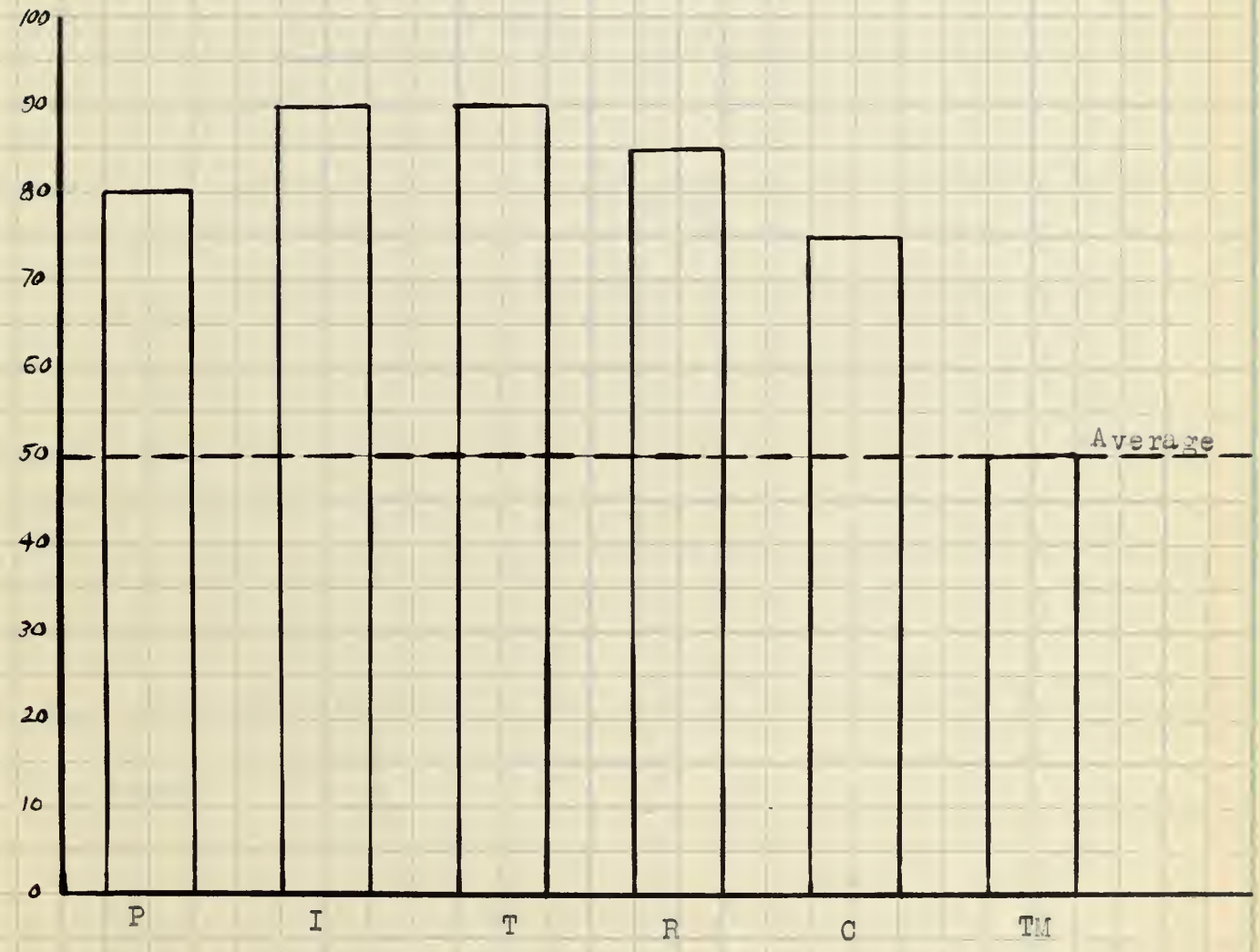
This 10 yr. old boy in grade 5B plays saxaphone in the band and has made excellent progress. His schoolroom work is poor and his teacher reports that he is indifferent. It can be seen from the chart that his talent is quite superior.



SUBJECT Case No. 22

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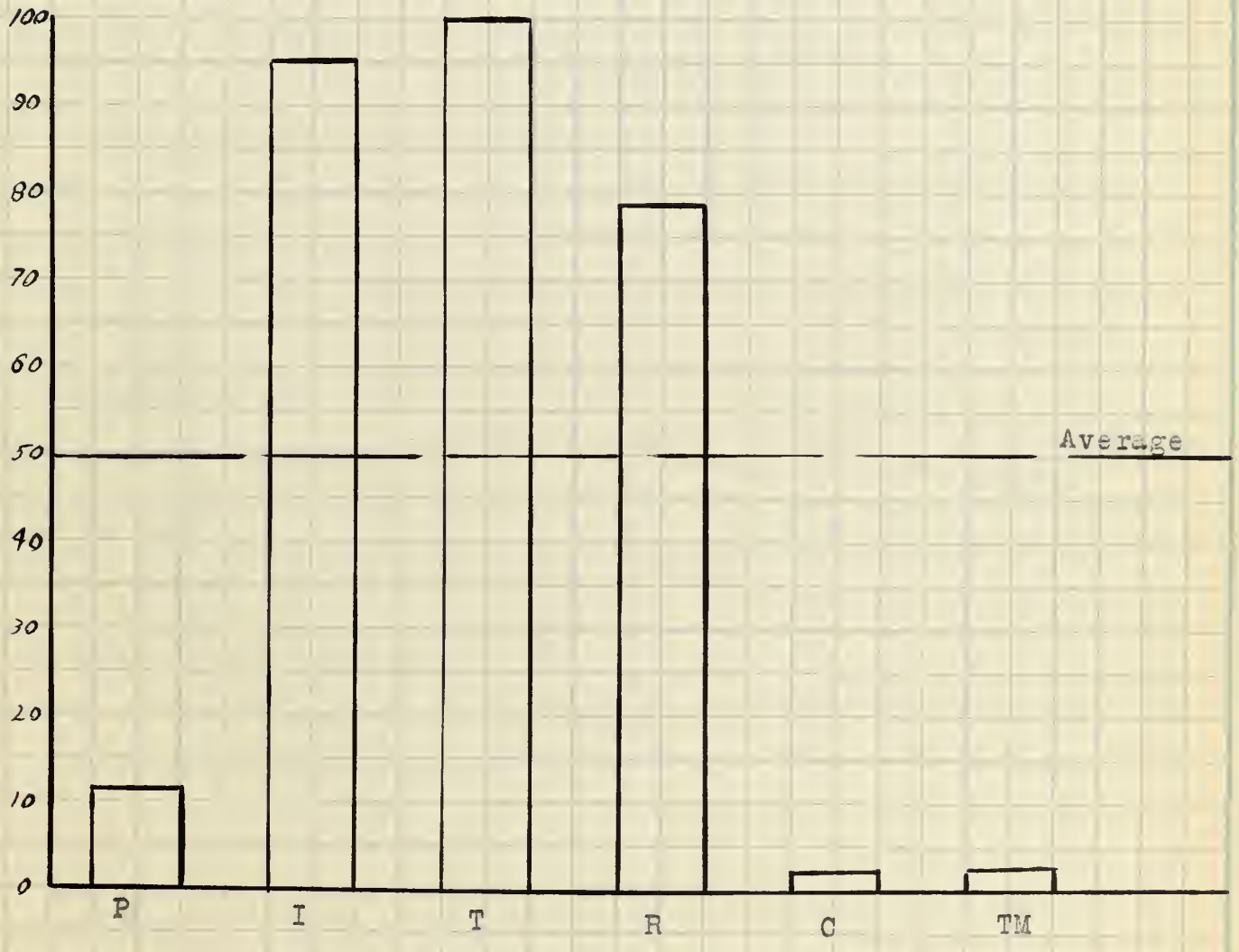
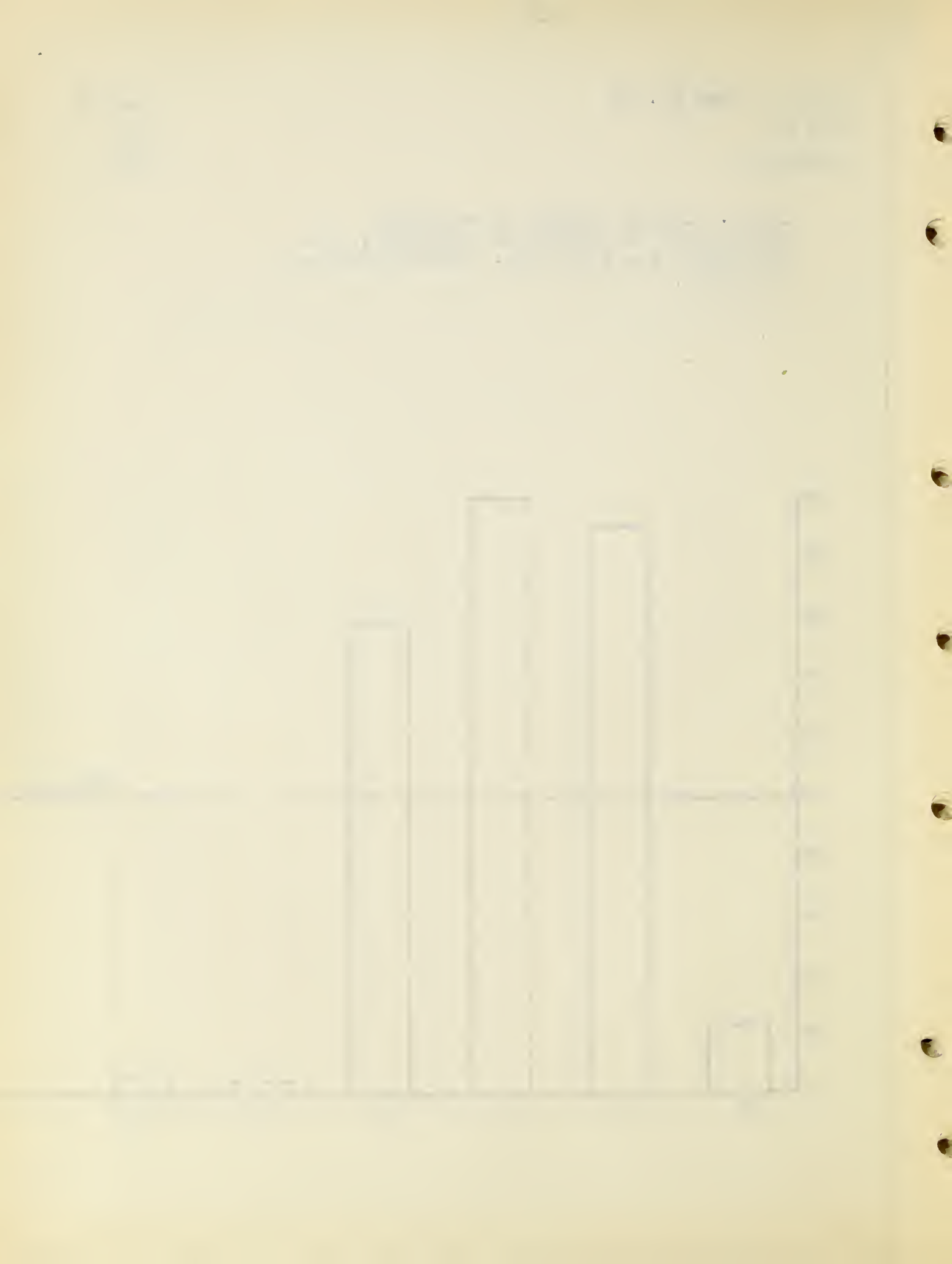
10 yr. old boy - grade 5B - general average low but scores on intensity, time and rhythm are very good. Possibility as a drummer.





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SUBJECT Case No. 23 SHEET NO.

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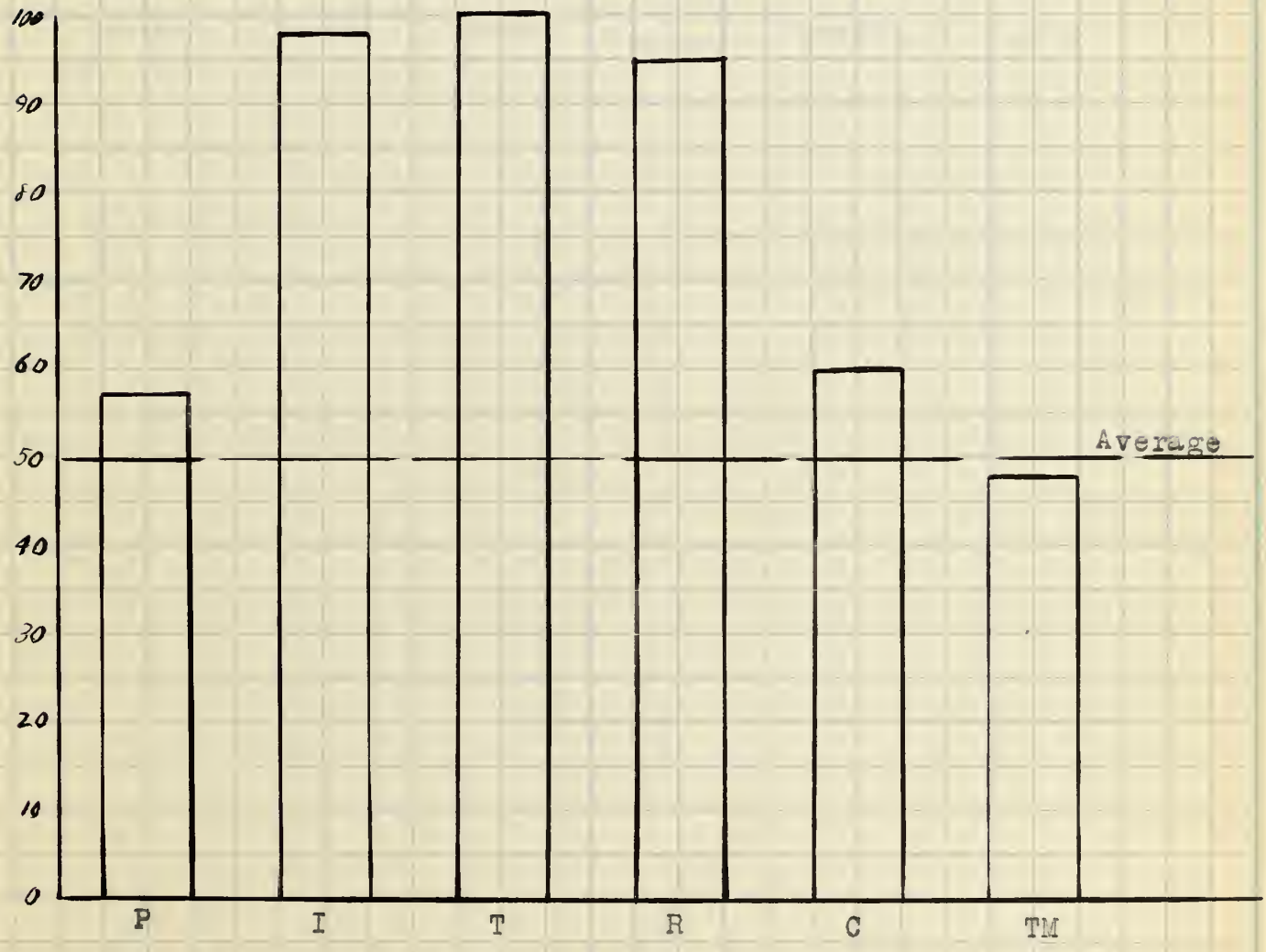
10 yr. old boy - grade 5B - lacks application and attention in school. His chart indicates talent and he will be given a trial on some instrument.



SUBJECT Case No. 24 SHEET NO.

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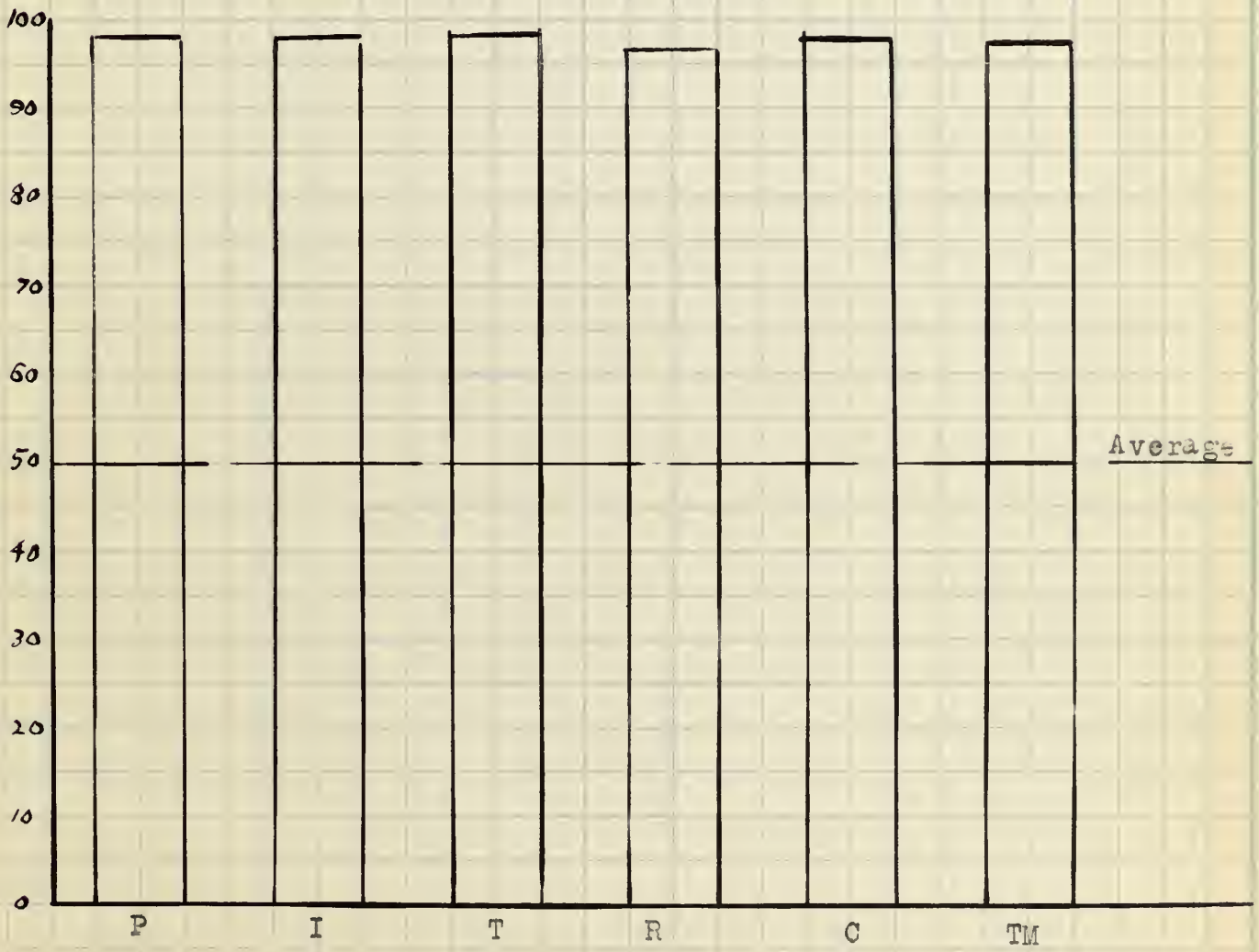
12 yr. old boy - plays trumpet in high school band. He has made excellent progress. Note the consistently high scores in all six tests. They indicate his unusually high talent.



SUBJECT Case No. 35. SHEET NO.

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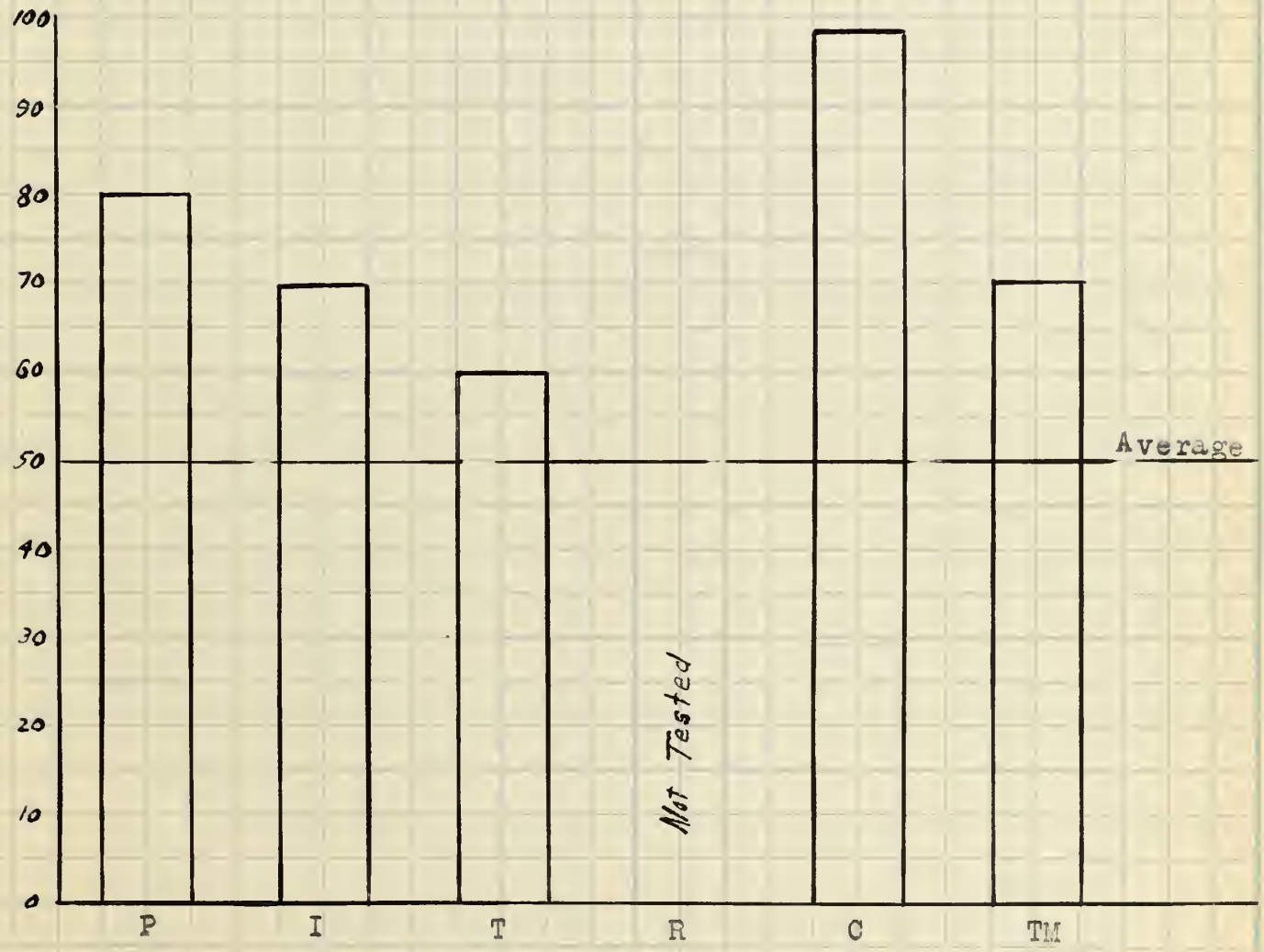
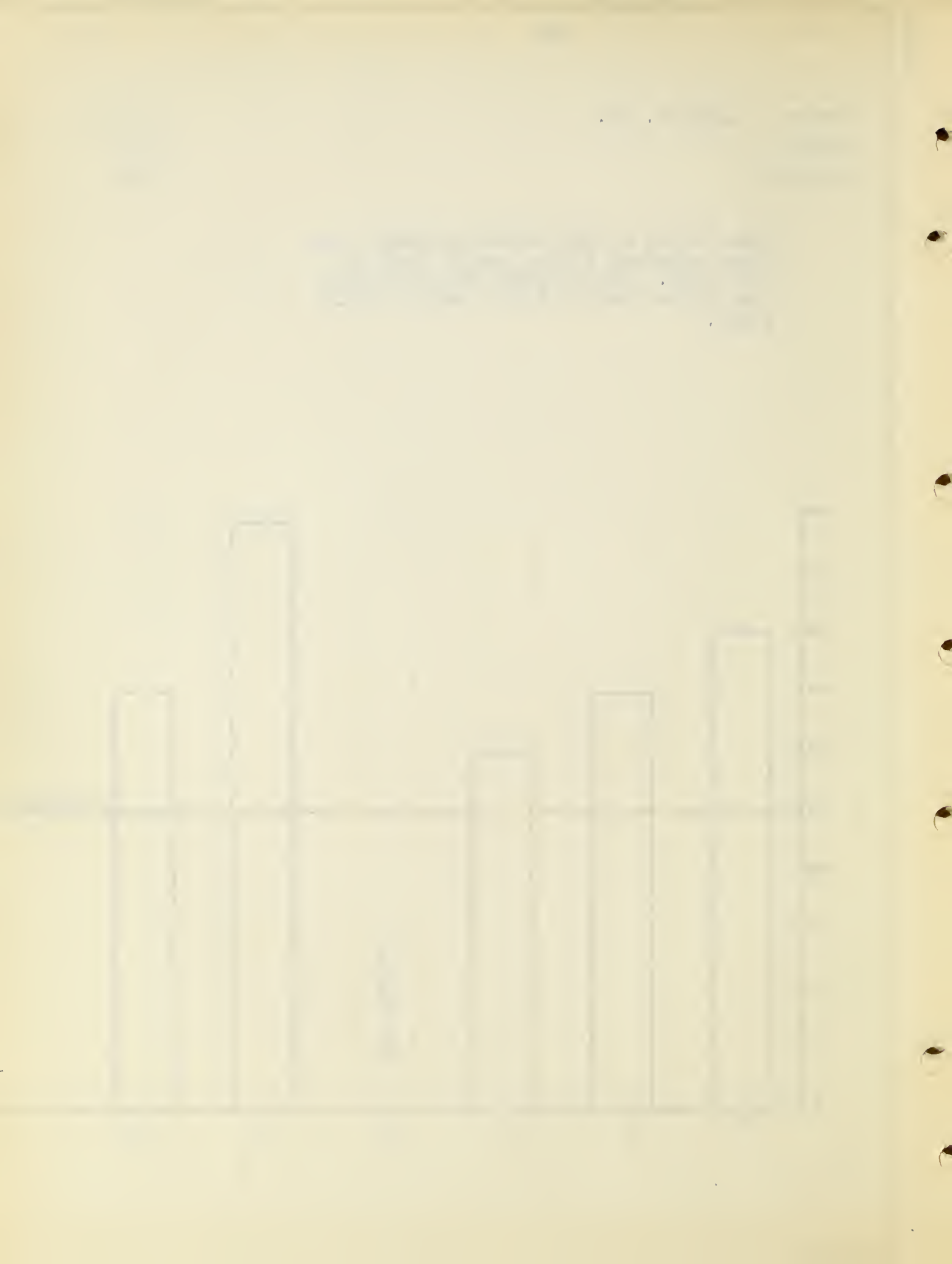
This boy is a high school sophomore and plays trombone in the school band and orchestra. His progress has confirmed the indications of talent shown bythis chart.





SUBJECT Case No. 26

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FILE

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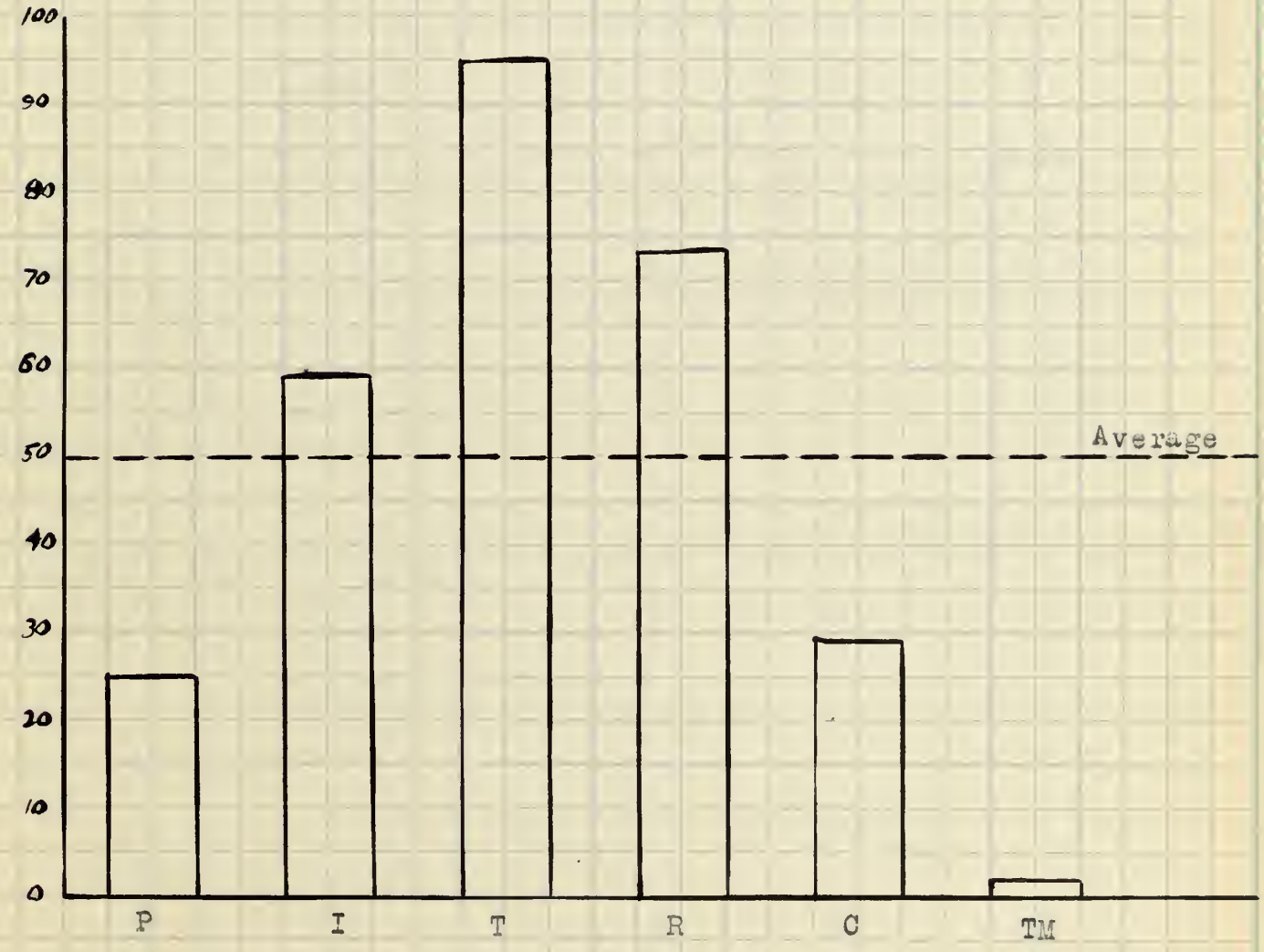
10 yr. old boy - grade 6A - good student - fine attitude. Intensity, time and rhythm scores indicate aptitude for drums.



SUBJECT Case No. 27

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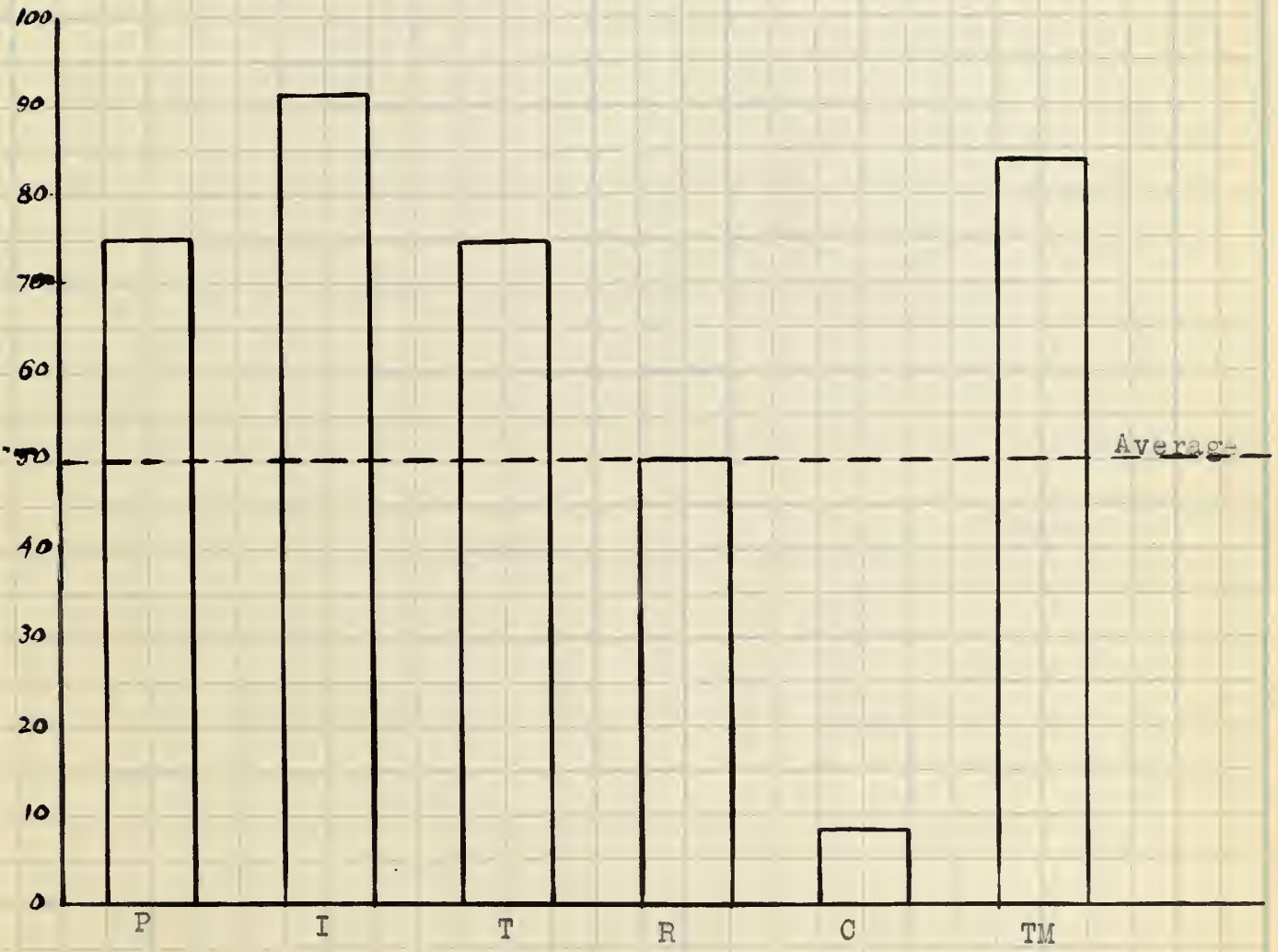
11 yr. old 6A grade boy - studying trombone and making good progress. His record is generally high with the exception of consonance.



SUBJECT Case No. 28. SHEET NO.

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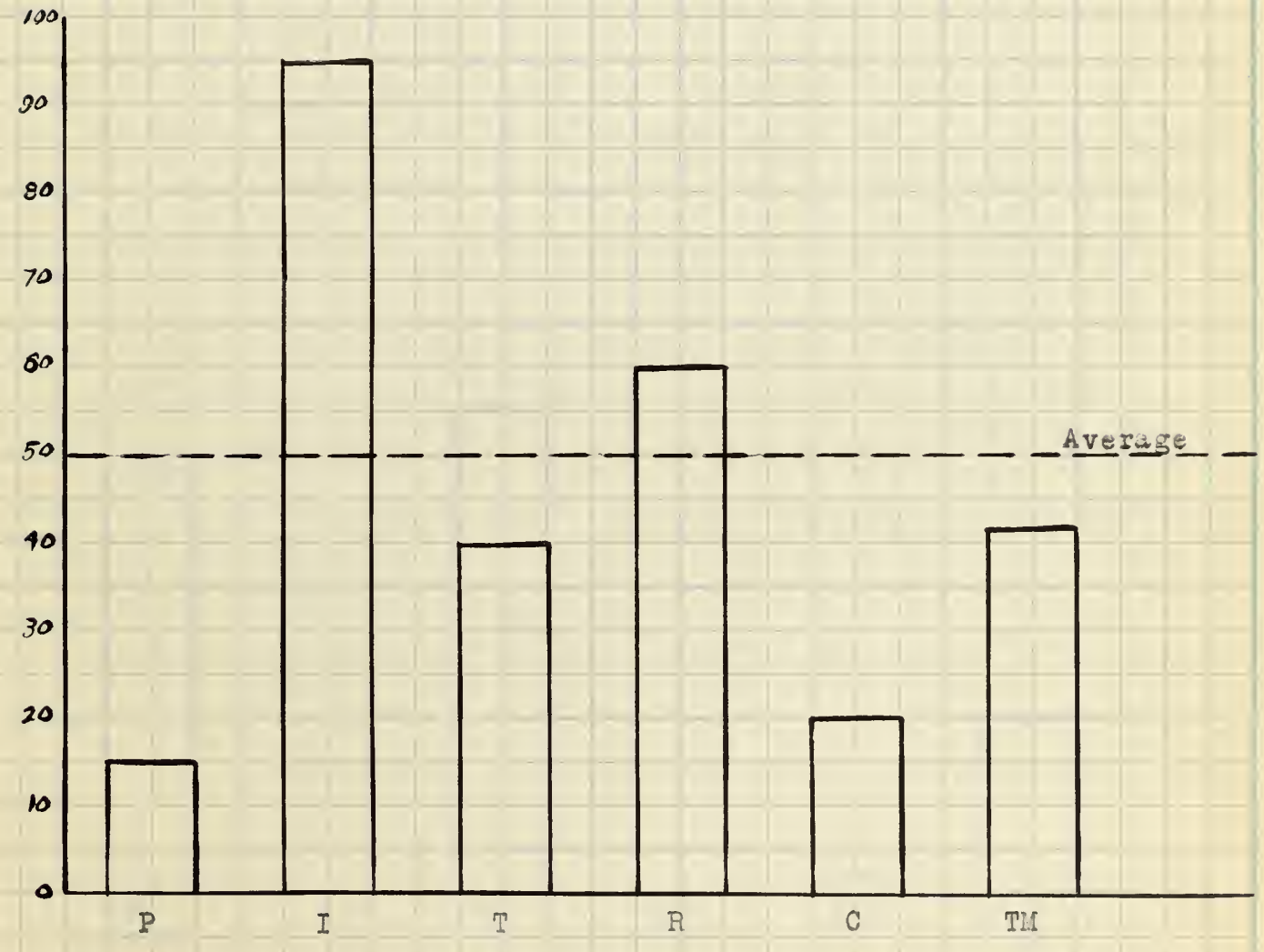
This 15 yr. old girl was in a special class for those of low mentality last year. She was placed in grade 6B this year. While her record is generally low, note the intensity score.



SUBJECT Case No. 29 SHEET NO.

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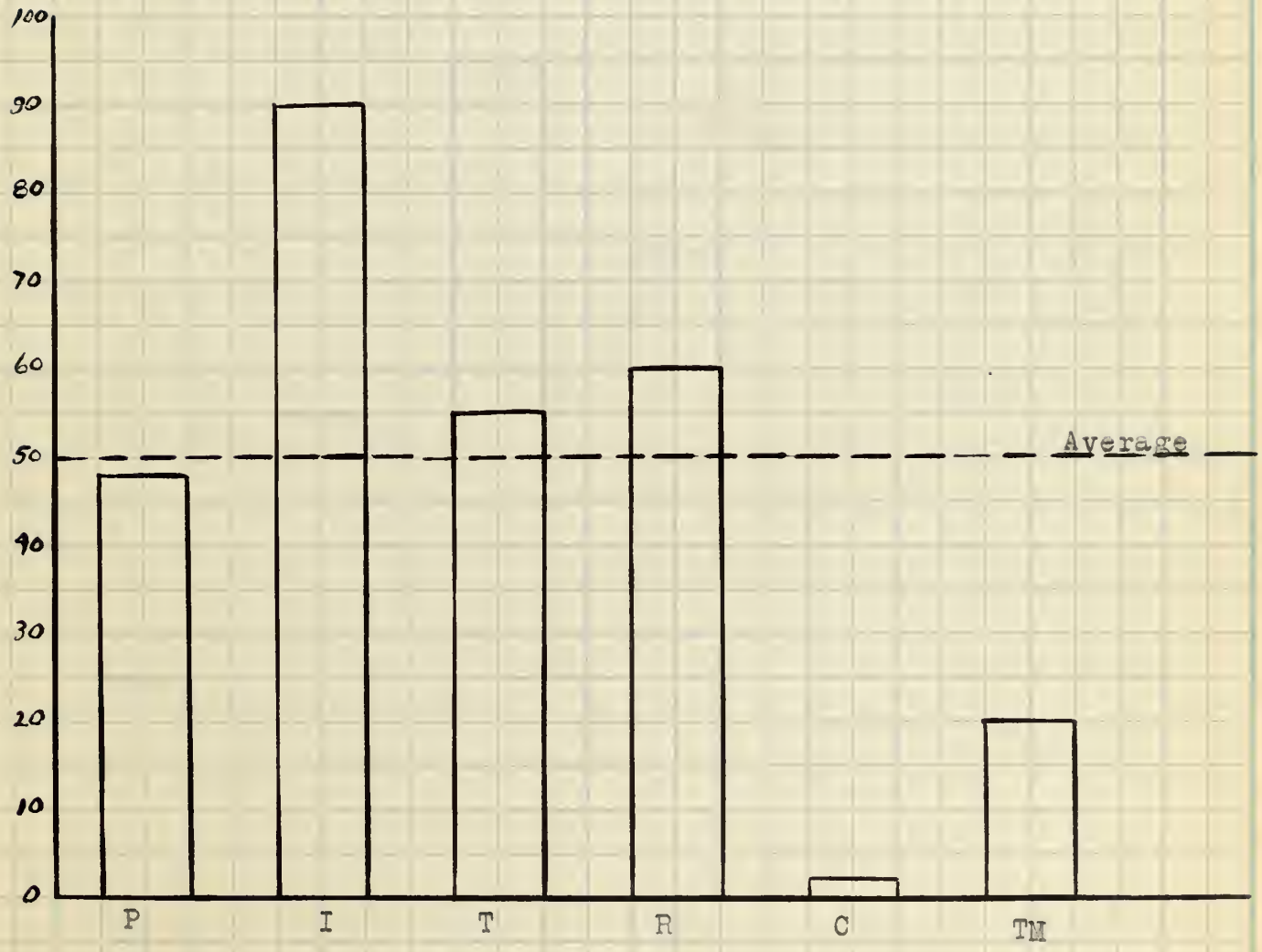
14 yr. old girl - grade 6B. Mentality rather low. Pitch, Intensity, time and rhythm are average or above and she might do well on an instrument.



SUBJECT Case No. 30 SHEET NO.

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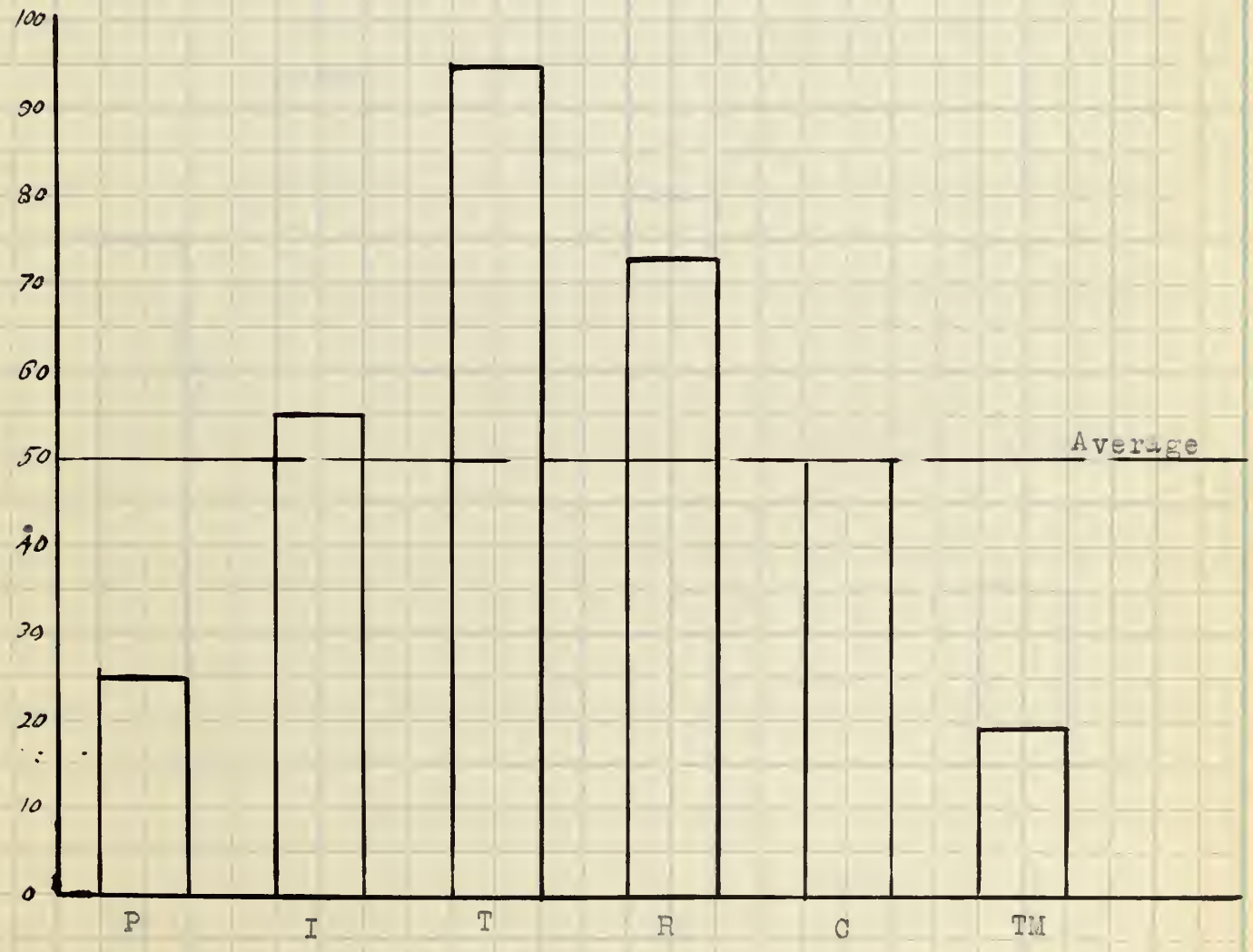
A 6A grade boy - 11 yrs. old - indications of time and rhythm means he might do well on drums. Intensity is also above average - consonance is average, pitch and tonal memory are weak. Good student and his attitude is excellent.



SUBJECT Case No. 31 SHEET NO.

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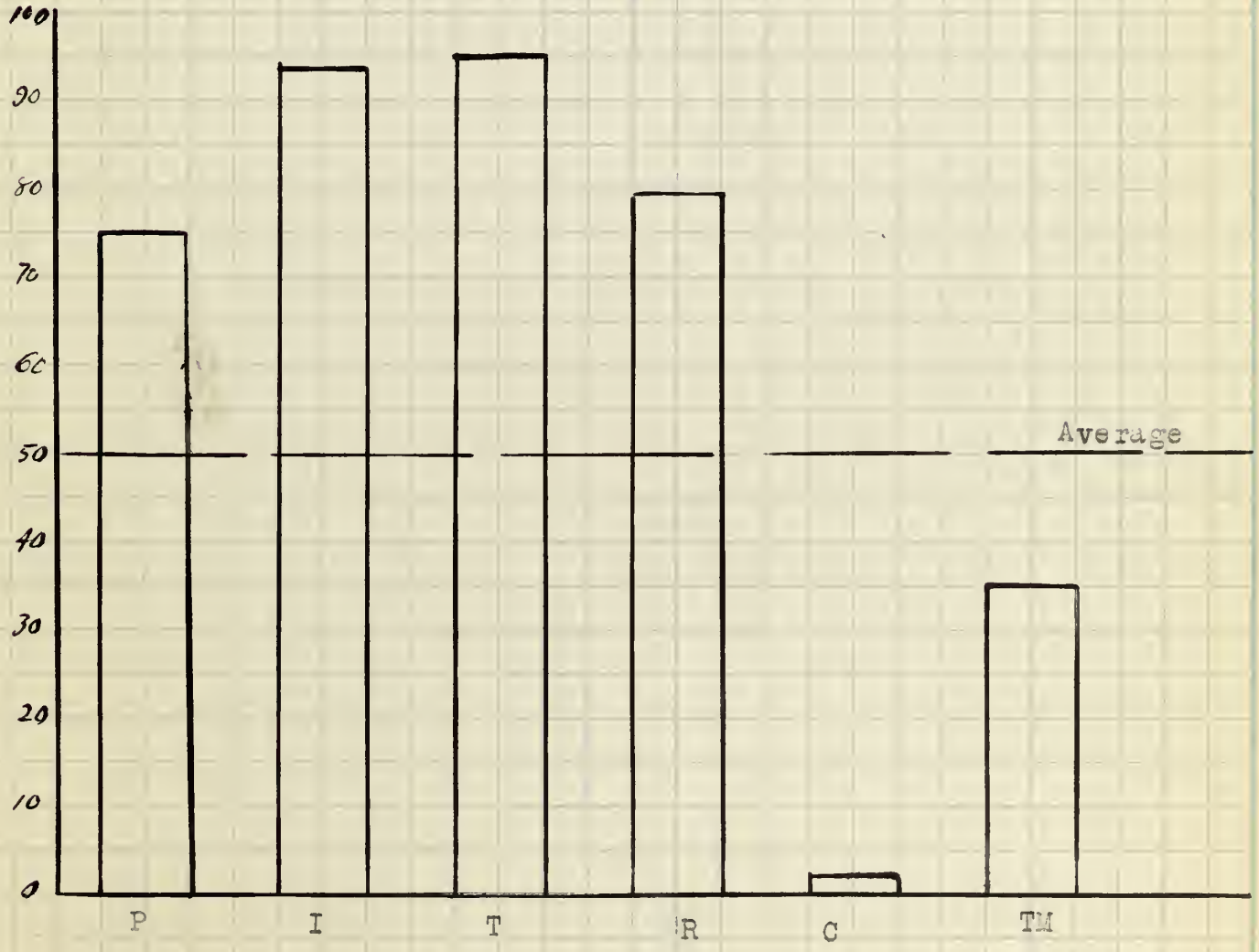
11 yr. old 6B grade boy. Does very well in singing. Poor student and attitude is poor. His record shows positive indications of talent and we shall start him on an instrument.



SUBJECT Case No. 32 SHEET NO.

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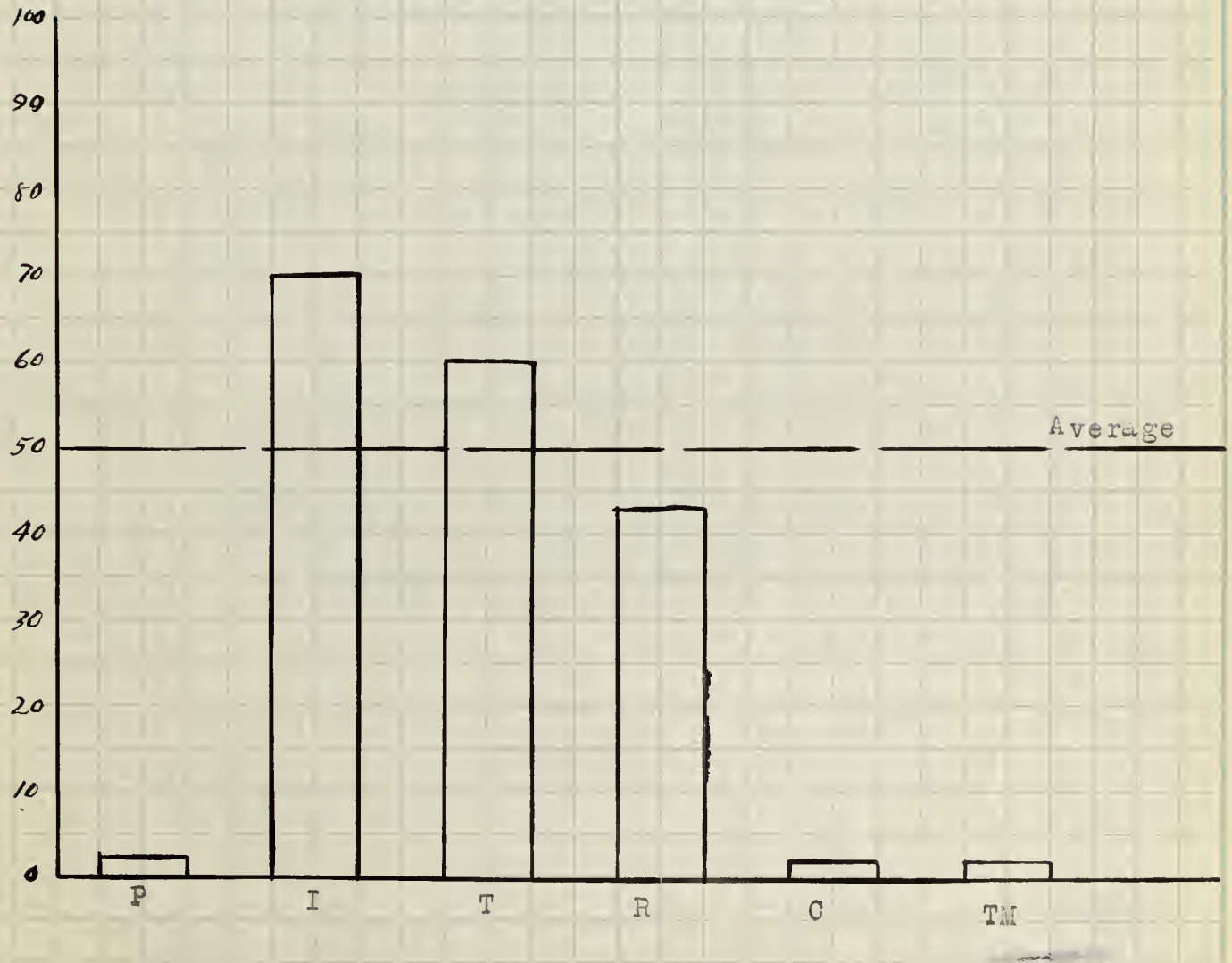
10 yr. old girl - grade 5B - slow mentally but has good attitude and effort in schoolwork. Possible material for instrument not requiring good sense of pitch, but in general her record does not warrant giving her instruction on instrument.



SUBJECT Case No. 33 SHEET NO.

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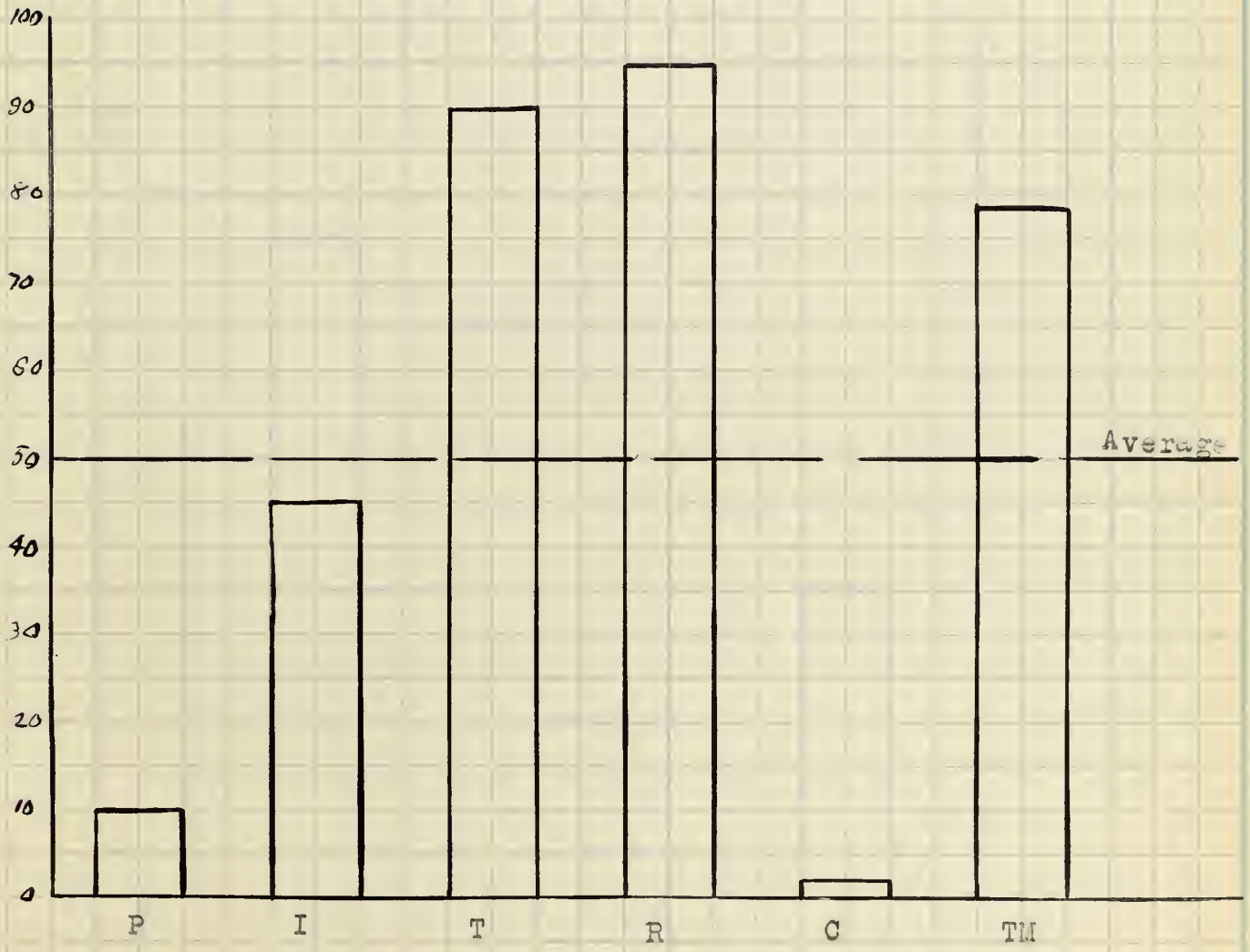
10 yr. old boy grade 5A. Excellent in classroom work and attitude is excellent. His sense of pitch is very low. He was given violin lessons before the tests were given but was discontinued because he could not tell when he was in "time." May do well on drums.



FORM 102-A

SUBJECT Case No. 34. SHEET NO.

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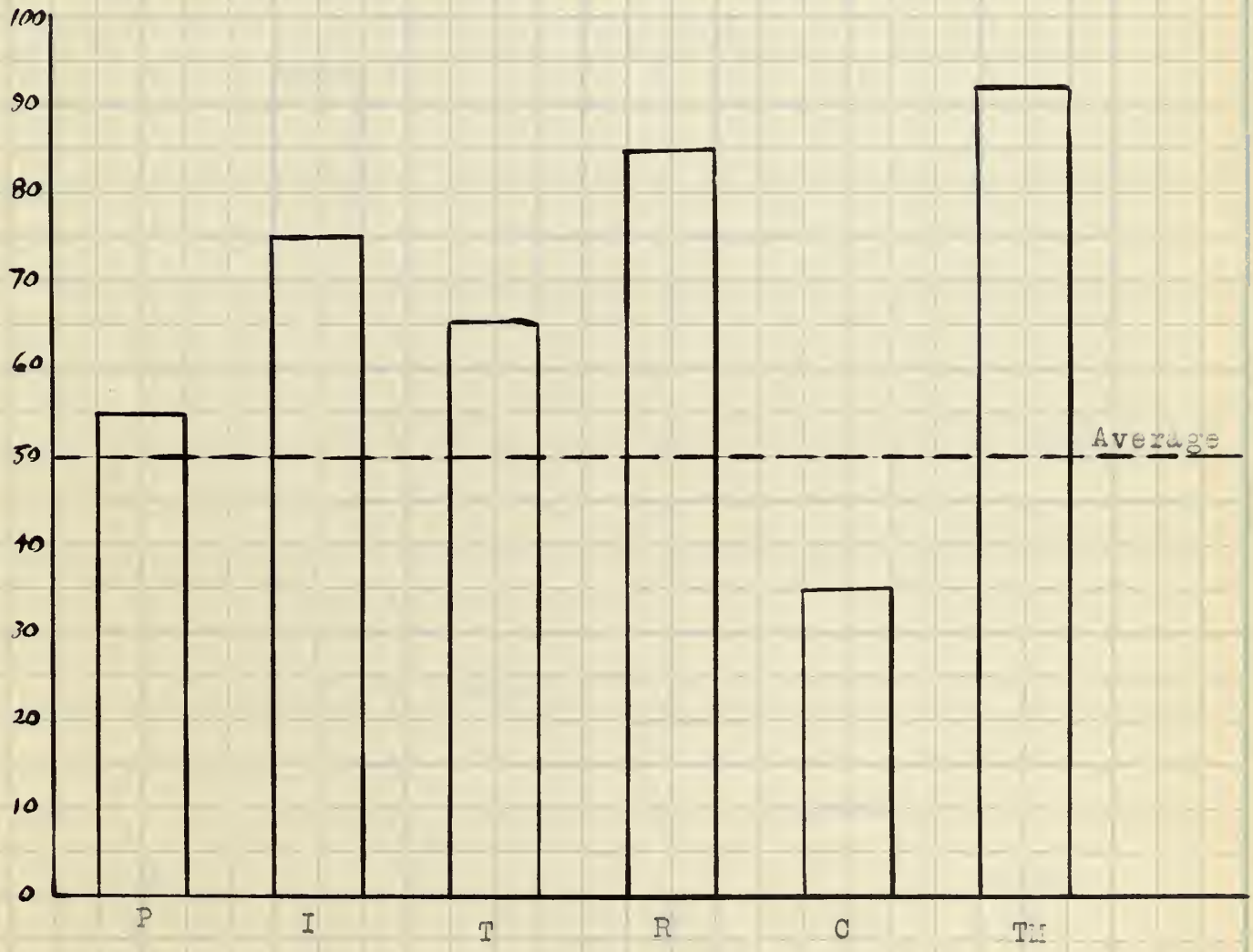
10 yr. old boy - grade 6A - good attitude and attention in classroom. His record should warrant giving him a trial as pitch, Intensity, time and rhythm are all quite high.



SUBJECT Case No. 35.

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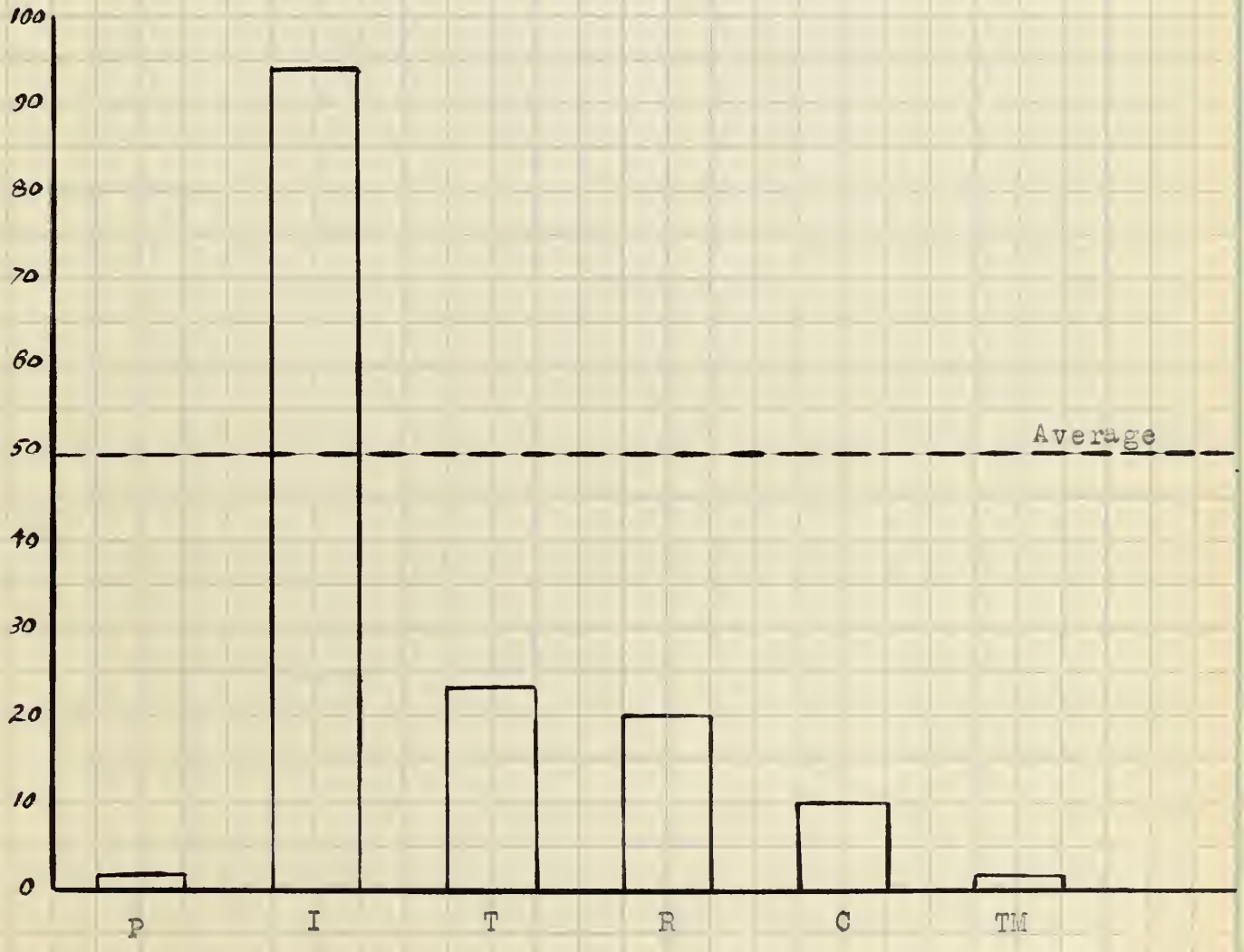
10 yr. old boy - grade 6A. Shows a good sense of intensity but is poor in all other senses. Poor talent in general.



SUBJECT Case No. 36 SHEET NO.

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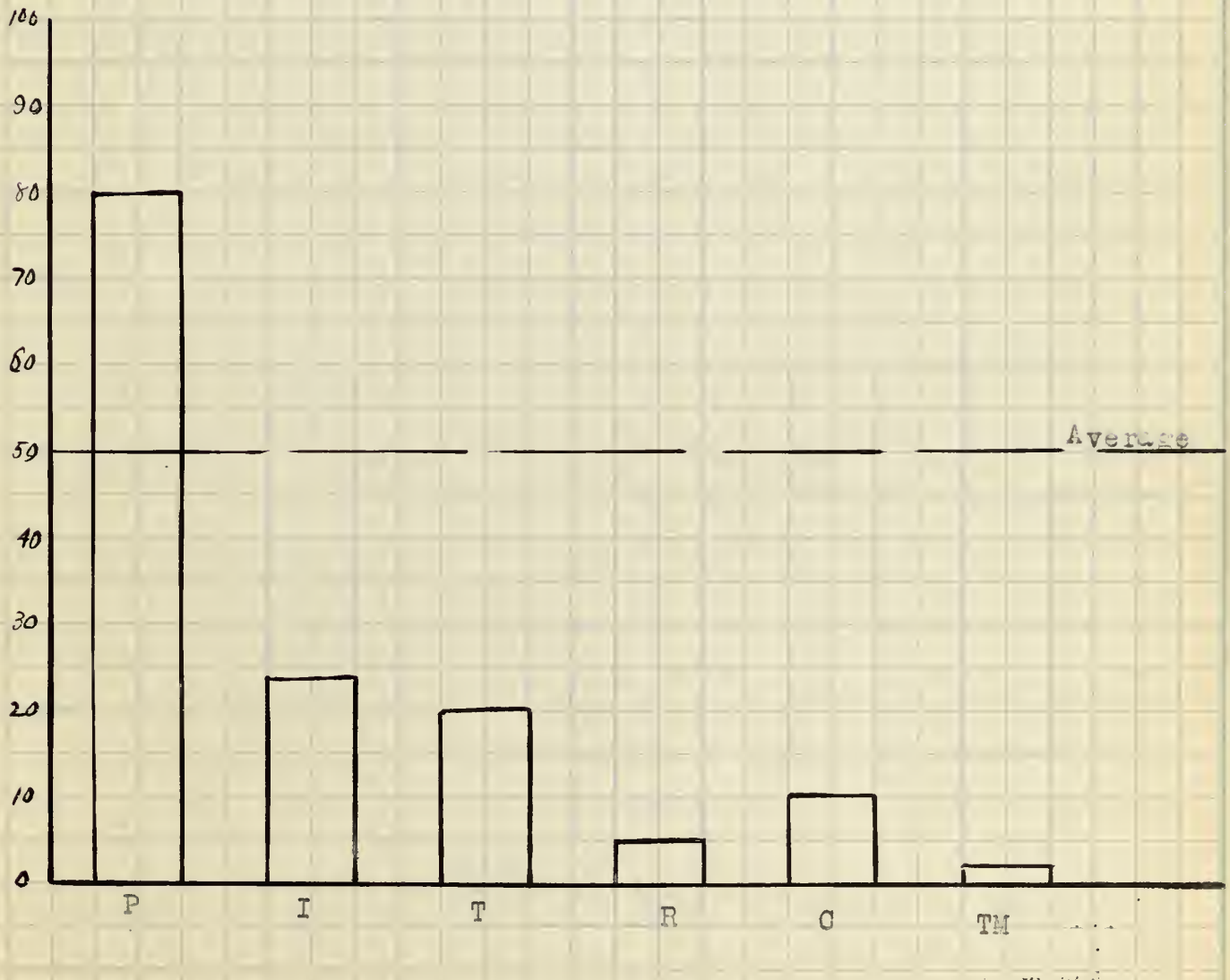
11 yr. old boy - grade 6A - Pitch score is high but all other scores are low. Talent in general seems to be very doubtful.



SUBJECT Case No. 37 SHEET NO.

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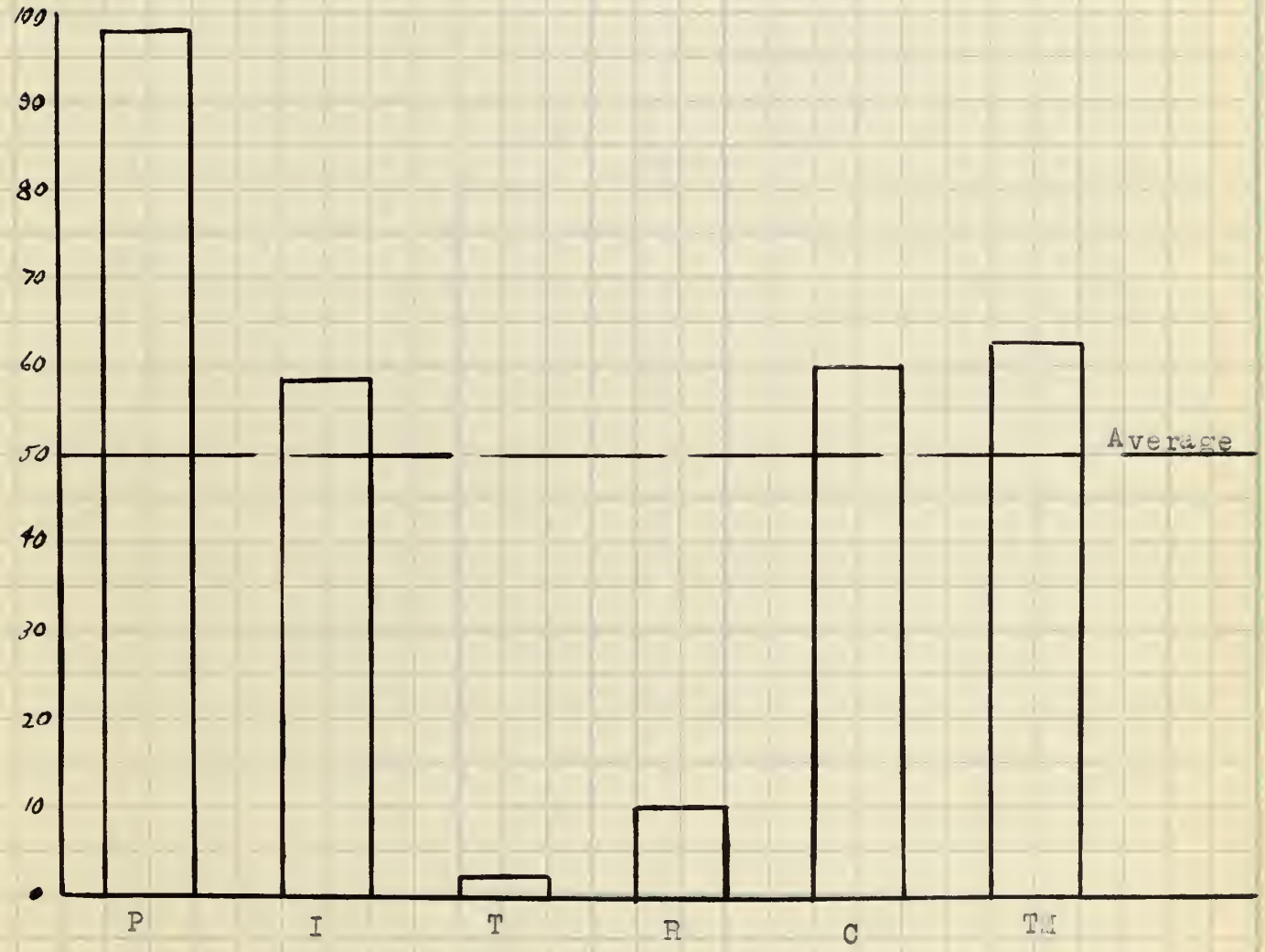
10 yr. old boy - grade 5B - slow student. His chart is erratic but in four of the tests he shows positive talent. He is worth further investigation.



FORM 102-A

SUBJECT Case No.39 SHEET NO.

MADE BY FILE

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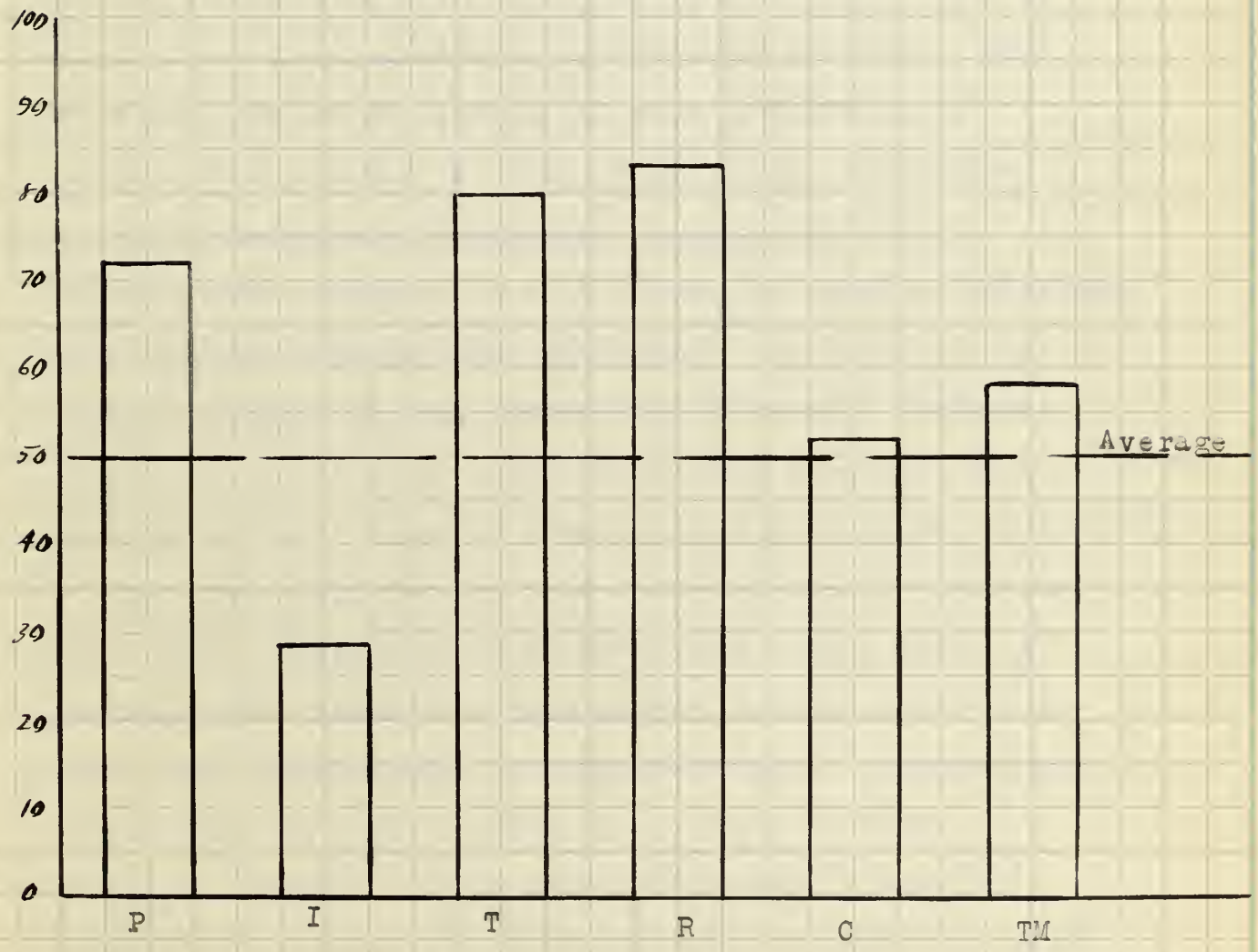
10 yr. old boy - grade 5A - shows a good sense of pitch, time, rhythm and an average sense of consonance and tonal memory. Intensity is low. This boy is a good "risk."



CONCLUSION

In summing up the study of the Seashore Tests and their value to the instrumental department of the public school, there are certain considerations that may well be discussed. The first consideration is: "Do the Seashore tests measure the fundamental musical capacities, and if this is true are the tests reliable?" The various studies reviewed in the first part of this thesis tend to substantiate the claims made by Professor Seashore. Time and experience in the history of music and musicians indicate that a sense of pitch, time, rhyth, consonance and tonal memory are fundamental for success. Music teachers have struggled in vain to develop capable performers from students lacking these qualities. Furthermore, the studies reviewed in this thesis have in several instances dealt with experimental groups which have been used to discover whether or not an unmusical group could be trained so that they would develop into good musicians. There has never been a study made that showed that such a thing is possible while there have been several studies made which prove that training does not improve talent. Other studies, notably that of Hazel Stanton of the Eastman School in Rochester (reviewed in the section "History of Previous Studies") have been made which show that students who score low on the Seashore tests meet with little or no success in the

study of music. The directors and faculty were so impressed with the prognostic value of the Seashore battery that a rule was passed that no candidate for study at the Eastman School would be accepted who scored low in the talent tests. An institution of high standing, the Eastman School's policy is worthy of consideration especially as this policy was adopted only after the directors were convinced through the scientific results of the tests given by reliable psychologists. There have been some cases where testers have felt that the measures were not to be relied upon but they are isolated exceptions and we can reasonably feel that the measures are reliable because of the many scientific investigations which have indicated their validity. It is not the writer's purpose to make an exhaustive study of their reliability, but to depend in great part on the extensive research already done in this phase of the subject. The writer is particularly interested in the use of these tests in his own school situation. What practical use can the Seashore measures serve to the teacher of instrumental music?

It has already been suggested that the tests may prove valuable in the economy of time and money by eliminating those who lack the necessary ability before they begin the study of an instrument. The East Hampton School Department has adopted the policy of giving instruction and also the use of an instrument to any child who wants to learn to play and

has the necessary talent. Naturally only a wealthy community can be as generous to its children. The Board of Education, however, expects that the music department will show excellent results. In turn, the music department can do its best work only when it has sufficient talent to call upon. The writer has come to the conclusion that the tests should be given once or twice every year in the fifth and sixth grades. As it has already been noted, the Seashore battery is not of practical use below the fifth grade- no norms are given below this level and children of the fifth grade age are young enough to begin the study of a musical instrument. From the talented children of this age we can build the foundation for a good band and orchestra because by the time these children reach high school they should be developing into capable musicians. The varying degrees of talent will range from fair to superior. The superior talented should be given extra instruction if possible with opportunities to play solos in public. Sometimes too much of the teacher's time has been directed toward drilling the less talented children and the musically gifted have been more or less left to their own resources instead of giving them the opportunity to develop to the extent that their capacity warrants.

The elimination of the unmusical may raise the question that possibly this is not a democratic type of education and that even unmusical people can get considerable enjoyment from playing in band or orchestra even if their ability is limited. The writer questions this last consideration as he has

found from his experience that unmusical children soon tire of an instrument when the novelty has worn off. This also answers the question of democracy in education. There are so many children who have sufficient musical talent that if we were to take any child for music lessons regardless of his talent our department could not do justice to every child who presented himself for lessons - the number of pupils would be too many and some who were sufficiently musical would be overlooked. Individual differences in music must be taken into account as they are in other fields. It is regrettable that so many parents of musically talented children will not encourage them to follow their natural inclination, while it is also rather unfortunate, and yet at the same time to be admired, that other parents of unmusical children will make sacrifices in order that these youngsters can "take lessons." It is a pity that this is so often true but at least we as music educators can use our influence along the right channels. The Seashore Tests might well be employed in aiding the music department in directing the educational and vocational guidance of its students. In music, educational and vocational guidance are often one when a child shows such positive indications of talent that he could safely be encouraged to follow music as a career. Speaking along these lines, Professor Seashore says, "The greatest significance attaching to surveys of this kind is that they furnish a convincing revelation of the magnitude, the fixity and the significance of individual

differences in musical talent and its general distribution. Surveys are, however, of little value unless they are done for a specific purpose and unless the findings are followed up. Perhaps the best procedure now being tried out is that of having an examiner in the school system whose main function is to select and encourage the most talented pupils as discovered by these and other means and to certify them to the agencies of musical education." In the small school system the supervisor must do this work along with his regular duties if he is sincere in his desire to guide the children with whom he is in contact. The music department in the East Hampton Schools has arranged the results of the Seashore Talent Tests on filing cards for ready reference. A card for each child tested lists the results of each of the six tests plus his individual personal traits such as general classroom attitude, ability in vocal music, physical traits (if they are noteworthy) and mental rating and capacity for study. At present the mental scores of the East Hampton children are not available in reliable form and the music department has depended on the classroom teacher's observation of her children for this information.

With these individual records (some of the case studies appear in this thesis) we have a fairly definite means of selecting subjects for instrumental study rather than accepting any pupil indiscriminately for a try-out period, only to find that many of them have no aptitude for music, thereby

wasting considerable time and expense. Our standard of attainment in band and orchestra should be raised over a period of years with the elimination of the unmusical and the discovery of talent that otherwise might never be known. Only time will tell to what extent our plan will be successful but weighing the evidence of reliability and the practical uses which the Seashore measures have served, we can reasonably expect that they will be an agency not only for raising the level of instrumental music but also a direct contricution to a sincere educational, and in some cases, vocational guidance.

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